# ALCOHOLISM AND RECIDIVISM OF NEW ZEALAND OFFENDERS

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## ABSTRACT

The aim of this thesis is to determine whether or not alcoholism is a predictor of recidivism, and if a predictor, how good it is. In 1983, McLean (in press) administered the Michigan Alcoholism Screening Test (MAST) to a group of inmates. His aim was to see if the MAST could predict certain types of offenses as alcohol related. In the present study, McLean's results have been used to see firstly, if the MAST could predict recidivism, and secondly, if it could also predict recidivism of alcohol related offenses.

In simple regression, the MAST produced encouraging results. It was shown to be predictive of recidivism, including alcohol related recidivism. In multiple regression, the MAST did not fare quite as well, with other much stronger predictors proving much more comprehensive.

The MAST remains one of the best indicators of alcoholism available today. Although not as good at identifying recidivists as other predictors, one has to acknowledge that the MAST was taken out of context. It was not designed as a test to identify recidivists, but rather alcoholics. Thus, any contribution that it makes to the prediction of recidivism is significant.

**N.B. Please note that words such as his, him and he are used in this thesis rather than non sexist words. This is because almost all of the literature reviewed has used male offenders as subjects. This includes the present study.**

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CHAPTER I

# CHAPTER I

## WHY IS IT IMPORTANT TO TRY AND PREDICT WHO MAY REOFFEND ?

An obvious answer to this question is so that we have knowledge on how to control reoffending, whether it be by means of incarceration, or rehabilitation, and also, so that the source of the crime can be treated. Resources used in the treatment of criminals are also limited and because of this it is essential that they be used as economically as possible. Recidivism is seen as being an appropriate means for determining the types of people for whom resources should be used.

Whether or not a criminal will commit more crimes is dependent on the magnitude of their crime rate, that is, the higher the individual crime rate, the greater the number of crimes averted through incarceration, (Blumstein and Cohen, 1979). Because of this, it has been suggested that longer sentences be given to recidivists, thus preventing more potential crime. This is not however in accordance with the theory that as a criminal proceeds through his career, he will commit progressively less crimes. In this case, keeping a recidivist in prison longer on account of his history is not necessarily stopping any potential crime, (Blumstein et al., 1979). The problems that are seen in this debate are a small part of the reason why `selective incapacitation` was first introduced as an alternative theory.

Using resources economically is an essential part in the administration of the justice department. One illustration of how resources, for example prison space, can be used more effectively and efficiently is through `Selective Incapacitation`. The basis of this programme is to select offenders for prison. In doing this it is anticipated that both the crime rate and prison numbers would be reduced.

## Selective Incapacitation

Selective incapacitation proposes that prison terms for some crimes should be based upon the amount of crime an offender is predicted to commit if not incarcerated. Thus, a strategy of categorising offenders into two groups could be employed; those who are predicted to reoffend at a high rate would serve longer than their specified legal sentence and those who are predicted not to reoffend would serve less. It is speculated that through these means, crime would be reduced and prison space used more efficiently, (Gottfredson and Gottfredson, 1985).

> Since a state's prison system can accommodate only a certain number of prisoners at any time, it would best serve the interests of the community to identify those prisoners who would represent the greatest threat if they were set free: i.e., the offenders who would commit the most serious crimes, who would commit them at the highest rate, and who would tend to continue committing them for the longest time into the future. If, among those

> convicted persons eligible for incarceration, the most serious predators - so called `career criminals` - could be identified and sent to prison, such a strategy of `selective incapacitation` would greatly enhance control of crime.
>
> (p241; Blumstein, 1983).

It is obvious that selective incapacitation requires some sort of means for being able to predict an individual's future offending.

The basis for selection of the criminals in this strategy is very complex. To work out predictive information on an individual level, it is necessary that data be forwarded on "average individual arrest and crime rates, as well as estimates of the average lengths of criminal careers", (p139 Gottfredson et al., 1985). With this information, it is possible to predict who is going to reoffend, and `selective incapacitation` is one reason why it is necessary to be able to do this.

More specifically, Greenwood (1982) cited in Decker and Salert (1986) proposed a seven variable scale for the purpose of prediction with regard to selective incapacitation. The variables are:

1. a prior conviction for the same offense as charged;
2. incarceration for more than half of the preceding two years;

3. conviction prior to age sixteen;
4. a commitment to a state juvenile authority;
5. use of narcotic drugs two years prior to present commitment;
6. use of narcotic drugs as a juvenile and
7. a state of unemployment for more than half the time in the preceding two years.

[p.218-219]

Aside from prior convictions, all data is gathered via self report. The variables are then added together to determine a high, medium, or low likelihood of future offending.

It is clear that using a basis of past reoffending in predicting future recidivism is the most efficient basis for determining the length of a person's prison term. However, there are other ways to determine this. For example, by looking at the seriousness of a person's prior criminal record. A distinction can be made between offenses against the person and property offenses. These in turn could be used to categorise serious and non-serious offenders.

Property crime refers to the violation of another's property rights. Crimes such as burglary, cheque forgery and car conversion fall into this category.

Crimes against the person involve acts such as murder, rape, assault and theft. It is usual for these crimes to

carry a heavier penalty than property crimes, (e.g. committing a murder carries a life sentence in the majority of cases).

The public demand of the justice system, that people who have committed serious crimes be punished accordingly. This means that where a serious offense has been committed, a high prison term should be imposed. There is a problem present in this situation however. It is difficult to draw a medium between punishing people for a serious offense and reducing prison numbers by giving shorter terms to people who are not likely to be recidivists. As has been pointed out, crimes against the person are considered more serious than property crimes. This is reflected in the sentences that are administered for various crimes. However, although all of the crimes are serious, as can be seen in the increasing penalties, murder - the most serious of all crimes and that which carries the maximum penalty, is the crime least likely to be committed for a second time by the same person. This cannot be explained by the fact that the person is out of circulation for a period, because "life" is merely a term of seven years. This shows that there is conflict in determining imprisonment as punishment, or imprisonment as incapacitation. Blending the two rationales of imprisonment is the most ideal situation. This involves using selective incapacitation within desert constraints. This is illustrated by Wilson (1983) cited in von Hirsch (1985).

> Sentencing would be shaped, though not rigidly determined by sentencing guidelines that take into account not only the gravity of the offense and the prior conviction record of the accused, but also the full criminal history, including the juvenile record and the involvement, if any, of the accused with drug abuse. The outer bounds of judicial discretion would be shaped by society's judgment as to what constitutes a just and fair penalty for a given offense; within those bounds, sentencing would be designed to reduce crime by giving longer sentences to high rate offenders (even when convicted of a less serious offense) and shorter sentences to low rate offenders (even if the offense in question is somewhat more serious).
>
> p.16 von Hirsch (1985)

Reoffenders versus likely non-reoffenders opens the door to a wide and varied range of criminal. Predicting that a criminal is unlikely to reoffend and therefore setting him free under the guise of selective incapacitation may cause an uproar in the community if social and ethical considerations were not to be properly reviewed. These issues are pushed to the fore because of the high possible error rating associated with selective incapacitation. Despite this, selective incapacitation continues to be seen as one avenue forwarded as a means of reducing prison numbers and in turn using prison resources more efficiently.

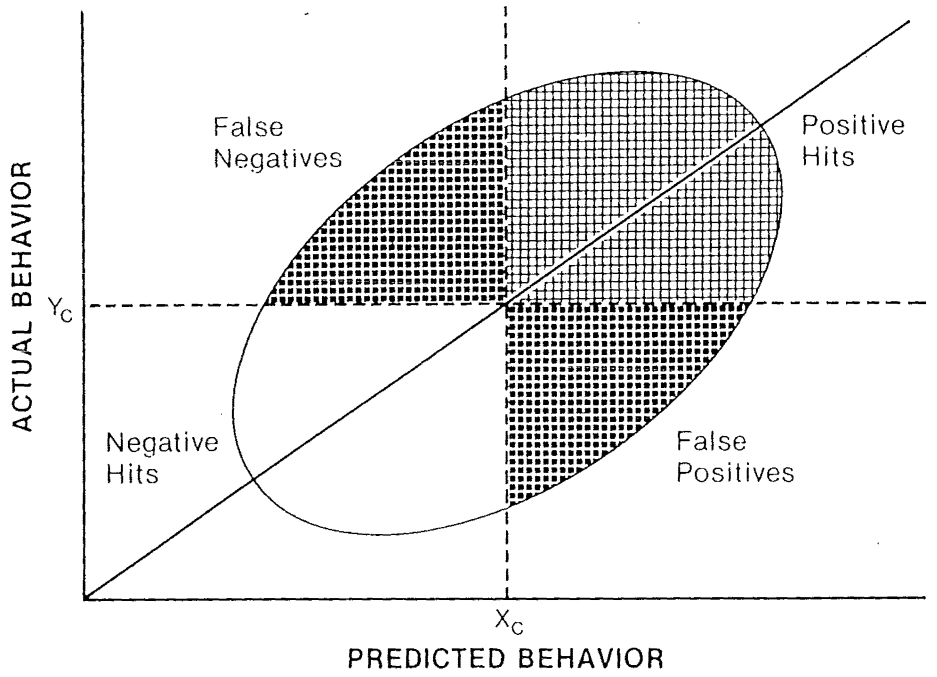
## Problems associated with Selective Incapacitation

As has been suggested above, there are some problems inherent in selective incapacitation. Several others are also discussed in the literature. These problems revolve mainly around the idea that if an error is made, public safety is threatened in one instance and a person unlikely to reoffend is incarcerated in another.

The problem with selective incapacitation is that unless the information on which decisions are based is accurate, there is the risk of making one of two types of mistakes. These are, false positives and false negatives. **False positives** are those persons wrongly considered bad, or likely to reoffend at a high rate, and are hence incarcerated for crimes that they might never commit. Condemning people for crimes in which they haven't even decided to be a part is considered a major flaw. **False negatives** is the reverse, where people are predicted to be good risks, but who may in fact put the public at risk. Without these anomalies, the system could be very successful. The result of this problem is that people lose their right to a fair trial for crimes committed, (i.e. false positives) and the public loses its right to protection from criminals (i.e. false negatives).

Figure 1 from Gottfredson et al., (1985) shows false negatives and false positives. `Positive hits` contains all those people who are predicted, successfully, to reoffend and who are thus sentenced accordingly. `Negative hits` is all those people correctly predicted not to reoffend.

Figure 1 : From Gottfredson & Gottfredson (1985) p.144




These difficulties are the barrier to implementing selective incapacitation. What are viewed as problems however, are present in society today. People are put in prison who are unlikely ever to be recidivists, (e.g. people who cannot pay fines and, perhaps, murderers as argued above) and leave out people who are likely to be recidivists. For example, The Press; Wednesday 3rd October 1990 documented a court case in which a young man drove a car under the influence of alcohol, had an accident and killed his lady passenger. For this offense, the driver received a mere seven months of periodic detention and license suspension of two years. Research has shown that felons who drink are highly likely to be recidivists, (e.g. Argeriou, McCarty and Blacker, 1985). That this type of result occurs without selective incapacitation indicates that there is probably little risk in applying the

technique. This could show that selective incapacitation is indeed viable and may in fact improve the system as is planned. Essentially, New Zealand has little to lose by trialing the proposal. Further, sentencing decisions have always relied on prediction and it is this that selective incapacitation brings into the open. Also, because the selection system is statistically based it can be tested, unlike hunches about how dangerous a criminal is. Thus, the error rate is likely to be lower than speculative predictive judgments.

Other resources

In New Zealand, there also has to be selective use of resources other than prison space. For example, psychological treatment which is issued by the Justice Department. The ratio of prisoners to psychologists is excessive, approximately 4,000:40. To make things worse, there are also approximately 10,000 probationers and 10,000 on periodic detention. This means that treatment should be given only to the people expected to gain from it, and those persons most likely to be recidivists without treatment should be treated. Similarly, there is a shortage of social workers who help to rehabilitate offenders through the probation service. Once again, only the persons predicted to respond to treatment and also predicted to be future recidivists should be selected.

One example of people who have been predicted to be likely future offenders and also those seen to respond to

treatment are the inmates based at Kia Marama. Kia Marama is the sex offenders wing at Rolleston Prison, Christchurch. This therapy has been made available by the Justice Department because of the high reoffending rate of sex offenders. Sex offenders are brought to Christchurch from all centres in New Zealand. Those most likely to reoffend are targeted for treatment. The unit was developed on the basis of research carried out by the Justice Department which justified the fact that with treatment, the recidivism rate of sex offenders is lowered.

Because of limited resources it is clear that alternative measures are going to have to be employed. Using these satisfactorily means that the most essential component of being able to predict who will reoffend will have to be enforced. Selective incapacitation continues to be one of the only methods of using resources efficiently.

Using a predicted reconviction strategy in New Zealand could provide more benefits to the justice system than is immediately recognised. Predictive strategies employed to determine who is suitable for either release or incarceration can highlight problem areas amongst inmates. This means that rehabilitative methods or programmes can become better suited to the need of preventing recidivism. The psychological treatment of inmates should become more focused on the problem area. For example, a conviction before the age of sixteen may indicate that the offender has had little family guidance or that the people around him may have led him to delinquency. The solution to this

problem could be assertiveness training for the inmate with a focus on recognising peer pressure. Treatment can be prescribed by ascertaining the predictive variables that make up the problem. Examples of some of the predictor variables will be described below. These include social skills training for different individuals and work skill programmes for others. Many of these programmes have documented reduced recidivism in inmates. Predicting who may reoffend and setting a rehabilitative course for them helps prevent recidivism. Once again, these resources are limited.

## Social skills training

Teaching social skills to inmates is a key area in criminal rehabilitation. That is not to say that all criminals need to be versed on how to act and survive appropriately in the community, but rather that some offenders, (e.g. sex offenders, child molesters, and aggressive offenders etc) are socially incompetent. These people will often turn to children, women or others who do not have the power, and who are thus automatically submissive to them which makes them feel superior. Likewise, it is unusual for a child molester to have had many [if any] relationships with adult women.

Bornstein, Winegardner, Rychtarik, Paul, Naifeh, Sweeny, and Justman (1979) attained positive results to a probability of less than 0.01 in their experiment about interpersonal skills training. They used two groups, one

that was involved in the training, and a waiting list group, all adult males randomly chosen from a prison population. An improvement was noted in those persons who had taken the course, particularly on items that were a part of the training, but also in social competence factors which were not directly related to the training. Part of the training procedure allowed inmates to reflect on social circumstances that had been problematic to them in the past, and from here role-playing was used as a means for breaking down the problem and solving it. This may account for the other more generalised situations in which the programme was seen to be successful even though it may not have been directly relevant. In sum, Bornstein et al., (1979) say that further research in this area is appropriate particularly to the prison environment. It is possible that for some inmates, for example those incarcerated for assault, that this kind of training may help reduce recidivism.

The social competence training scheme initiated at the California Correctional Institute uses the social learning theory as its conceptual base, and involves a comprehensive group of behaviour courses relative to social competence. As in the study by Bornstein et al., (1979) this scheme teaches prosocial behaviour through rehearsals and stresses the norms and expectations of society, (Novotny and Enomoto, 1976). In evaluating this course, it was shown that seventy to eighty percent of the participants reached their desired goals. Further, staff in the institute noticed a difference in the behaviour of the inmates. This

course aided the inmates in social competence, and in educational awareness, bridging a gap between both the prison and the community, and the prison and higher education centres, (Novotny et al., (1976). This course, as was the one the one initiated by Bornstein et al., (1979) was open only to those inmates who showed a willingness to participate.

> In practice, the prison administrators usually try to allocate whatever resources happen to be available first to those inmates who are interested in using them for self improvement, who seem motivated, and who therefore can be expected to benefit from them. As for providing programs for unmotivated inmates, the authors urge caution.
>
> p54 Novotny et al., (1976).

These sort of social competence training courses are especially useful for those inmates who grow up without an adequate role model, and who as a result adopt the behaviours which end in their arrest. Sometimes these people require the instruction of how to react to the pressures of society, and to be made aware of why the behaviours that they have used in the past are inappropriate to the laws of the state. Knowledge of this kind can be active in preventing reoffending. Without these skills, the inmate might otherwise resume his previous way of life.

## Rehabilitation of substance abuse criminals

Substance abuse criminals are a category who require different rehabilitation treatment, though in conjunction with that provided for other criminals. Whilst having the same need for social skills, their barrier to success is often their addiction problem. Further, a substantial number of crimes are committed whilst under the influence of some substance, (Collins, 1981) and so the crime can be determined to some extent as substance motivated. Thus, treating an addiction can lead to reducing future crime. Literature has, over the years recommended that people suffering substance abuse problems be identified, especially drunk driving recidivists, (Saltstone and Poudrier, 1989).

One such programme that has been devised is the Cornerstone programme, (Field, 1989). The programme is long running, with inmates spending up to twelve months of their sentence in it. From here they are paroled, and continue to receive care for the following six months.

The programme's main aim is to provide an environment conducive to rehabilitation. This means that the inmates are separated from the rebellious, negative, anti-authoritarian atmosphere seen in prisons. Rather, the emphasis is on peer support and pressure to change. Rules and guidelines are set out, and the inmates are made aware of the types of behaviours that are wrong or inappropriate. Consequences for these behaviours are made known. Rewards

are provided in the realm of freedom so that the inmates have some control over their lives, and if a relapse occurs, either in their criminal thinking or their drug addiction, their freedom is suspended. The criminals help to run the programme so that they have responsibility, and are more likely to take it seriously, this being through a structured day schedule. Both criminality and substance abuse are treated simultaneously in the programme, as one part untreated can lead to a failing in the treatment of the other. In this sense, crime leads to substance abuse, and substance abuse to crime. Intervention whilst the inmates are on parole further reinforces recovery, (Field, 1989).

The results of this experiment show that the more time spent in treatment, the more likely the inmate is to avoid criminal activity. Of the people who graduated from the programme, 74 percent managed to stay out of prison in the following three years after parole, compared with only fifteen percent of non-graduates who spent only two months on the course, (Field, 1989). The numbers of people who stay away from trouble is progressive, in accordance with their length of time on the programme. Waldo and Chiricos, (1977) got similar results after completing their experiment on recidivism:

> It is possible that length of participation, if not related to the occurrence of recidivism, may be related to the extent of recidivism, when the relevant recidivism measures are treated as continuous variables.
>
> Waldo and Chiricos, (1977) p98.

The programme gives encouraging results in lowering the recidivism rate of the participants as determined by their length of stay. Field (1989) states that there is a positive correlation between treatment and reduced reoffending. Where substance abuse offenders are not treated, their offending gathers momentum over time. This programme highlights the importance of identifying addicted criminals early on in their sentence so that habilitation can be initiated. They have shown that the greater the length of time spent on the criminal and the addiction problem, the greater the success for the future. Particularly prisoners who have been imprisoned for offenses related to substance abuse, but also any others who can be identified as having these problems should be targeted for programmes such as this. Substance abuse is as clearly a factor amongst the prisoner population that needs addressing as social skills. Annis and Chan (1983) found that self esteem is a major part in treating substance abuse criminals.

**Offender personalities and treatment**

Annis and Chan (1983) looked at the interaction of offender type by treatment programme. The subjects were a group of one hundred males who had recognised alcohol/drug problems, though operated at average or above average intelligence. Using eleven personality measures, the group were put into two category types, and followup studies were done to look at recidivism of the men. From the group therapy, those men considered to have a high self image had

fewer, and less serious reconvictions than the group with a low self image. However, those men from the intensive programme did not produce lower recidivism rates on average, than the men in institutional care. This suggests that a positive treatment effect is only likely for those men with a high self image, and in this case they are less likely to recidivate after the treatment programme. Thus, those men with a low self image may produce a negative effect after treatment. This study shows why it can be important for the personality type of the offender to be ascertained before a sentence, or treatment programme is imposed. The wrong personality type being chosen for a particular treatment programme may be negatively combined with recidivism, (Annis and Chan, 1983). (See also Babst, Moseley, Schmeidler, Neithercutt and Koval, 1976 who show that the type of person partaking in a programme needs to be controlled if evaluating a programme, as this can influence the results. Certain people should not be on some programmes.)

"A person's acts are affected by his concept of self and the individual's life situation", (Astone, 1982). Because some criminals feel labelled (e.g. deviant, criminal) they also feel rejected by `the system`, and thus shun institutions, parole officers and so on, leading to impending crime or recidivism. Being incarcerated can mean that the prisoner does not have the environment in which to resolve his problem, which can also lead to recidivism. Problems may even become intensified through being incarcerated, (Astone, 1982). "Other research findings

emphasised the effect of incarceration, length of sentences imposed, parole supervision, and drugs and alcohol abuse as major causes of recidivism", (Astone, 1982). Looking at the source of the problem in determining the sentence would appear to be one way of reducing recidivism.

As well as therapy sessions, there are other rehabilitative means of reducing recidivism. Many can be taken outside of the prison. For example, community service restitution centres, and community-based group homes, (Blumstein, 1983). Selection must be made on the basis of the offenders history, and thus his potential to harm the community if put out on one of these programmes. The programmes cater to a wide range of offenders, some who naturally would be in prison were the programmes unavailable, and others who would only have gone on probation. (The latter group were the most likely to be on the scheme).

By being allowed on these programmes, the inmate can learn valuable communication and work skills. Similarly, work release as a part of one's prison term can reap the same benefits. Where this is not available, skills education within the prison is a good alternative.

**Work release programmes**

A major part in the habilitation, or rehabilitation of prisoners is in teaching them skills to enable them to gain employment on release, (Astone, 1982). Part of the problem

identified with criminals is unemployment, (Pritchard, 1979; Greenwood, 1982). Though disadvantaged by the labour market, it is important that the offenders be given some marketable skills which are sometimes lacking in their repertoire. In a work release programme, incarcerated individuals have the opportunity to work out in the community. A North Carolina study showed that whilst work release did not eliminate any possibilities for further reoffending, when the individuals did reoffend, it was to a less serious degree, (Astone, 1982).

When labour was first introduced into prisons it was considered a form of punishment, however an unemployment problem in the community in general has seen that work is not as readily available. In many cases, prisons have instigated educational programmes aimed at both occupying the inmate, and teaching him marketable skills for the future, (Sutherland and Cressey, 1970). Many prison programmes are considered successful, (Astone, 1982) with integration into the community after them being much more successful. One such programme is the Rikers Island Project in which inmates were selected from the New York City Jail. A followup exercise showed that fewer of the inmates became recidivist in comparison to the control group, this including drug addicts. A greater number of the experimental group attained white collar positions, and more also got positions that would lead to promotion than in the control group.

Thus, resources are used most efficiently if they are directed towards the rehabilitation of those most likely to reoffend. This can be in the form of counselling, or in teaching inmates skills that will occupy them on release. With employment, the criminal is less likely to reoffend.

## CONCLUSIONS

Ensuring the efficient use of resources is a major factor in why it is necessary to be able to predict who will reoffend. Because so many of New Zealand's resources are limited, it is essential that only those people most likely to reoffend and also those people likely to respond to treatment be rehabilitated.

Selective incapacitation was proposed to meet these needs. Under this scheme, only those people most likely to reoffend are sentenced to prison, (or given enhanced prison sentences dependent on the degree of the crime) and those unlikely to reoffend are not incarcerated.

One of the problems however, is that the public demand that all people who have committed a crime be punished, even though they may be predicted not to reoffend. Thus it is difficult to draw a median between incarceration as punishment and incarceration as incapacitation.

The possible error rate of selective incapacitation is yet another problem. False positives and false negatives have the power to incarcerate people who are unlikely to

reoffend and set free persons who have a greater [unpredicted] potential to harm the public. For this reason, the information that is used to generate predictions must be accurate.

Limited resources in all areas of New Zealand Justice highlight the reason for being able to predict who may reoffend. Where these resources can be seen to be of benefit is where they should be applied. Using predictor variables is one way of ensuring that the problem areas are being targeted. For example, the lack of social skills among some inmates is the basis of their problem and the reason why they are recidivists. Addressing this area can be a key in rehabilitating the inmate.

Substance abuse criminals can also benefit from social skills training, although their main rehabilitation comes from breaking their dependence on drugs or alcohol. Often these substances are the motivators of crime and the inhibitors of rehabilitation. There is a positive correlation between treatment and reduced reoffending, (Field, 1989).

Some programmes that are available are offered as alternatives to incarceration. As with any programme, a lack of qualified people dictates that a selection of criminals be chosen, (e.g. work release programmes and the teaching of employment relative skills). Because unemployment is related to crime, giving skills to those without them can help eliminate some of the potential

crime. Skills can also give a person a feeling of worth which aids in their recovery from crime.

The emphasis of this literature review is limited resources. Essentially, New Zealand cannot afford to keep a bulk of people in prison who are unlikely to reoffend. Under selective incapacitation, the sentences of many inmates would be reviewed to ensure that only those most likely to reoffend would be incarcerated. Similarly, resources such as social workers and psychologists should be concentrated upon prisoners who will respond to the treatment by lowering or eliminating their recidivism rate. When resources as limited as these are spread over as many inmates as is currently expected, the aim of reducing recidivism is not successfully achieved. In smaller more concentrated groups, this can however, become possible.

In chapter two, ways of predicting who will reoffend will be investigated. Again this information is needed so that resources can be used most efficiently and with the most success.

CONTENTS

CHAPTER II

## CHAPTER II

### HOW CAN RECIDIVISM BE PREDICTED ?

Pentonville prison in England, is a large recidivist prison especially for men who are serving short sentences. Arnold (1969), [Deputy Governor of H. M. Prison, Pentonville] collected statistics on inmates at this prison, and found that of 160 new prisoners received at Pentonville for sentences of less than three months, an average of 56 percent had committed drunkenness offenses. For a further 280 men received with sentences of greater than three months, 24 percent had a current drinking problem, and 28 percent had prior convictions for drunkenness. Arnold (1969) concluded that there was a most obvious need to be able to predict the types of people likely to reoffend, and speculated that alcohol consumption might be one indicator of recidivism.

In Chapter one it was shown why it is necessary to be able to predict recidivism. The major reason is so that resources, especially those that are limited, can be used with greater efficiency. Further, by predicting recidivism, groups most likely to reoffend can be treated and thus lower the overall crime rate.

This chapter will document predictors of recidivism. Variables that have been listed as predictors will be evaluated on their strength and ability to determine whether or not a person will reoffend. To be able to

predict recidivism, information about patterns of offending amongst inmates is required. Once data bases have been compiled, a number of predictor variables for offenders can be ascertained.

The variables that are to be looked at include things such as race, age and sex which are to be called "intrinsic variables". Intrinsic variables are those things over which a person has no control, or no longer has control. "Acquired variables" includes those factors over which an offender has had control, for example, alcohol and drug use, education and so on. Variables in both categories have been shown to be statistically related to recidivism.

## PREDICTORS OF RECIDIVISM

Pritchard (1979) reviewed and collated literature looking first at bibliographies compiled in 1935 and 1965, and also reviewed literature up to 1979. His review considered only those studies using adult offenders as subjects in recidivism literature. He collected seventy-one studies and had results of 177 samples for this piece of work. (p16 Pritchard 1979). In his study, Pritchard compiled a list of predictors of recidivism, and showed the number of samples that supported, or didn't support particular items of information about offenders as indicators of recidivism. Pritchard is careful to point out that the items have a predictive ability only when viewed individually, and that his figures do not indicate a magnitude of predictability.

Pritchard highlights the presence of prior convictions, (85%); stability of employment, (93%); age at first arrest, (81%); living arrangements, (85%); current income, (73%); history of opiate use, (90%); and history of alcohol abuse, (82%), as the most stable indicators of recidivism. The percentages shown do not indicate how many studies identified each variable, but rather the percentages of studies that showed the item as a predictor of recidivism. Table 1 presents the findings of Pritchard's review. (See over page).

From this table, it is clear that a number of items are associated with recidivism. These can be broken into two categories containing intrinsic variables and acquired variables. **Intrinsic variables** are variables that have to do with prior offending, (e.g. age at first arrest) and are also personal to the individual, (e.g. sex and race). **Acquired variables** are things that can be changed, and which affect the functioning of the individual, (e.g. marital status, education, drug or alcohol use). A number of these variables can be identified from Pritchard's list. Breaking the variables into intrinsic and acquired groups is seen as a useful division of predictors. By doing this, the types of things that most likely influence recidivism will become clear and in context with the individual.

Table 1: Adapted from Pritchard (1979).

Percentages of studies in Pritchard's sample that listed items as related to recidivism

| ITEM | % Related |
|---|---|
| Type of instant offense | 81 |
| Presence/number of prior adult convictions | 85 |
| Stability of employment | 93 |
| Age at first arrest | 81 |
| Marital status | 56 |
| Living arrangements | 85 |
| Race | 52 |
| Presence/number of prior adult incarcerations | 78 |
| Presence/number of dependents | 47 |
| Employment status | 67 |
| Presence/number of associates in instant offense | 33 |
| Presence/number of prior arrests | 90 |
| Type of job | 68 |
| Educational achievement | 46 |
| Weekly or annual income | 73 |
| Presence/number of prior probation orders | 69 |
| Intelligence rating/score | 50 |
| History of opiate use | 90 |
| History of alcohol abuse | 82 |
| Type of prior offenses | 67 |
| Stability of residence | 50 |
| Family criminal record | 50 |

Intrinsic variables:- Personal

Personal intrinsic variables are things that are predetermined by genetic makeup, and also things that an individual cannot any longer modify.

Variables which fall into this category from the list presented by Pritchard include race, age, intelligence and family criminal history. `Sex`, a variable not included in Pritchard's list, will also be reviewed in the following sections.

Race

Pritchard found that race was not a good indicator of future crime since only 52 percent of his studies found it a predictor of recidivism. This contrasts with the high proportion of polynesians per capita in New Zealand prisons. For example, the population of polynesians in Christchurch Women's Prison is approximately fifty percent. Similarly, Hindelang (1981) supports the fact that race is related to crime. His study combines the variables of sex, race, and age and their incidence in offending. For personal crimes, males aged 18 to 20 years and who are coloured have the highest rate. Personal crimes are those crimes that include rape, assault, robbery, and larceny, (Hindelang, 1981). It is true however, that bias toward racial minorities may exist in the court system. Most surveys that are done rely on Justice Department records which reflect the court's decisions. Socio-economic status

is another area which can [apparently] influence a judge's decision.

## Sex

Sex is also a major component in determining recidivistic tendencies. White women reportedly have the lowest estimated rate of offending of all, with coloured females having the second lowest, (Hindelang, 1981). Hindelang (1981) illustrated this in a graph that shows the total number of personal crimes committed in the United States per 100 000 potential offenders in population subgroups. This graph is reproduced in Figure two.

Figure 2 : From Hindelang (1981) p.465

VARIATIONS IN RATES OF OFFENDING

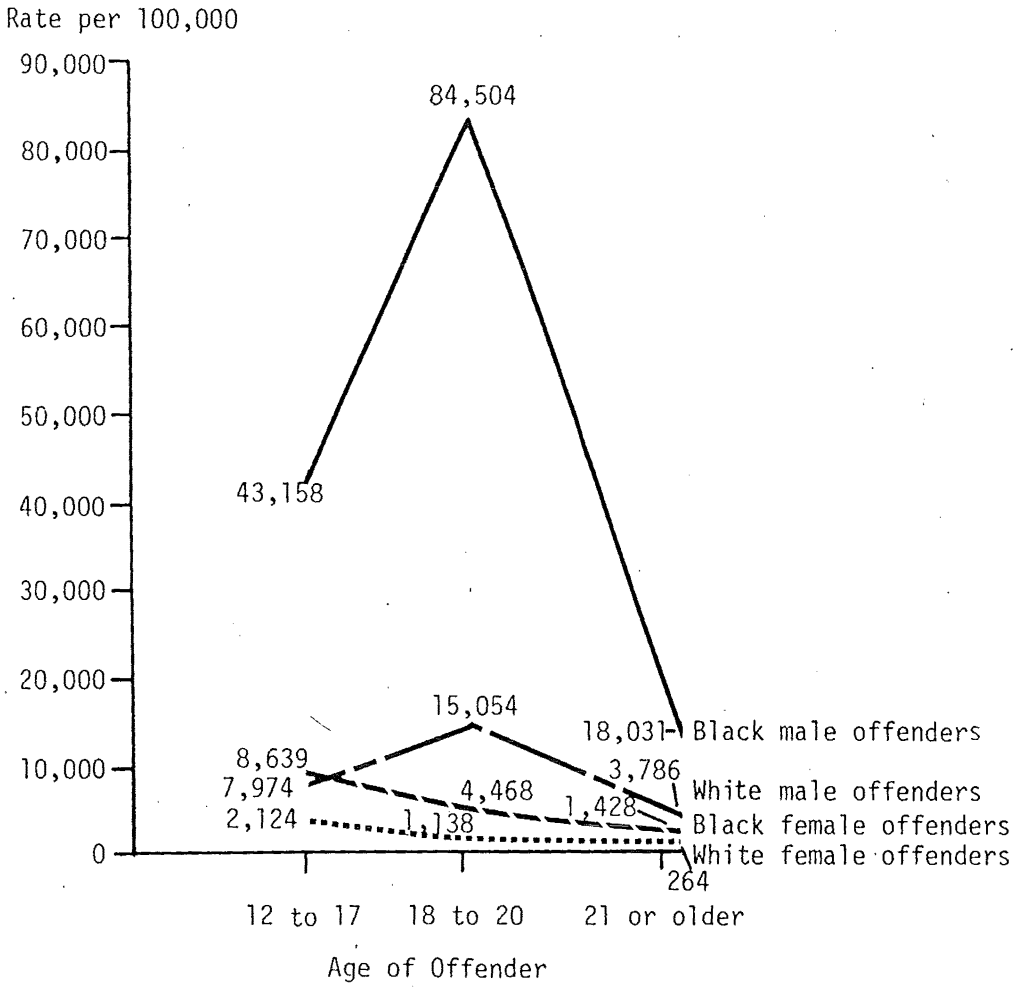



Figure 2 Estimated Annual Rates of Offending in Total Personal Crimes (per 100,000 Potential Offenders in Each Population Subgroup), NCS National Data, 1973–1977 Average

NOTE: Age includes perceived age of lone offender and perceived age of oldest member of an offending group.

Excluded are incidents (about 11% of the total) in which the victim did not know whether there was one or more than one offender and incidents involving offenders of mixed sexes or mixed races.

The numerator of the rates of offending for 12 to 17 year olds includes incidents (about 1% of the total) in which the offender was perceived by the victim to be under 12 years of age. The denominator of the rate is the number of 12 to 17 year olds in the general population.

It is clear from Figure two that females, regardless of age or race, are estimated to have a much lower rate of offending than males. For example, at age 18 to 20, per 100,000, males are estimated to commit 99 558 crimes, and females only 5606 crimes.

## Age

Age features in Figure two quite remarkably. A peak emerges for all males at around 19 years of age, compared to the highest rate of offending for females being in the 12 to 17 age range. According to the graph, women commit consistently less crime than men regardless of age, with barely an exception.

Age, would appear to be the easiest variable to evaluate. Hirschi & Gottfredson (1983) point out in their opening paragraph, that it is one of the few things that everyone agrees upon, - "no fact about crime is more widely accepted...common image of the age distribution" [p552].

Hirschi & Gottfredson (1983) note that there is a rapid increase in the level of crimes committed in the adolescent years, peaking at approximately twenty years of age, and then a decline through the adult years at a slower pace than the initial buildup. It is possible that this is due to the fact that in childhood, parents protect their children from the reinforcement of anti-social behaviour. When the child reaches adolescence, reinforcements for criminal behaviour, (e.g. money, and desire for peer approval) become more clear and a certain appetite for power emerges. Further, crime can be seen as an adventure for the young, sometimes where they strive to obtain possessions or privileges which are ordinarily set apart for the more mature. A decrease in crime as one ages may be a result of the fact that things once previously illegal

become legal, for example consuming alcohol in a public place.

Particular crimes are committed at different ages, (Greenberg, 1977). With this in mind, it can be shown that different crimes have separate curves denoting a peak and decline in the crime. For example, property crimes such as vehicle theft and burglary peak earlier than drug offenses and offenses involving confrontation with a another person (e.g. rape, assault and robbery), (Greenberg, 1977). All crimes have a peak and decline at some stage, - the crime itself however, determines how old the individual will be who continues to commit it. Thus, recidivism studies have shown that labelled criminals generally reduce their rate of offending with increasing age, - perhaps due to a maturing process.

## Intelligence

A great deal of historic literature on intelligence in criminals reveals that they were considered inferior to the general population. Hibbert (1963) [in Black and Hornblow (1973)] said the more often a man is convicted, the lower his intelligence must be. Very early intelligence tests reinforced this assumption with their positive results, and hence assumed correlation. Of late, this conclusion has been viewed with skepticism, and actively dispelled on the basis of predominantly unbiased testing agents, for example, Weschler's Intelligence Scales. Today, there is controversy over whether or not the two variables are

causally linked, (or linked at all). Mary Woodward in England (Hall-Williams, 1982) provided an hypothesis by suggesting, "`low intelligence plays little or no part in delinquency` but it may provide additional stress to a person who is already predisposed to crime".

Studies do however show that delinquents have lower I.Q.'s than control groups, (Hirschi and Hindelang, 1977). Longitudinal studies re-emphasise this point. It is possible that this discrepancy is present due to the fact that intelligent offenders are more equipped to evade the system. There is little support for this hypothesis, and similarly, little support for intelligence as a predictor of criminality and recidivism.

Despite this, there is some patterning in criminal intelligence that can be seen in recidivism rates, (Haynes and Bensch, 1981). Andrew (1977), [cited in Haynes et al., 1981], pointed out that the intelligence score of a delinquent was more of inflated performance, rather than lower verbal ability. She concluded that this difference was due to an imbalance in intellectual capability, which is stress-creating and hence conducive to delinquency. Haynes et al., (1981) examined this issue and found that Andrew's reasoning did not differentiate recidivists from non-recidivists. [Recidivists continued to have high performance I.Q.'s however explanations did not show how they were different to non-recidivists]. Haynes et al., (1981) suggest that the answers to this problem could lie in the realm of cognitive psychology.

A number of variables determine how intelligent a person is and rather than `intelligence` being labelled as an indicator of criminality, it is more probable that other factors have more influence, (e.g. peers, social learning etc.). Accordingly, it is unwise to view intelligence as a predictor of recidivism. Pritchard (1979) noted that only half of the studies he reviewed on the issue of I.Q. treated intelligence as a predictor of recidivism.

**Family criminal record**

It is possible that there is an hereditary characteristic involved in criminal behaviour. For example, the psychological trait of aggression is more common in males than in females, thus explaining why males may commit more violent crime than females. Further, crime would appear to be present in families. Kennedy [cited in Sutherland et al., 1970] compared "morons" to "nonmorons" and found that morons committed more crime, but also that the parents and other family members of the morons had a higher arrest rate than the nonmorons. There were difficulties in this study due to this as it was considered that the control group was not adequately matched.

Wilson and Herrnstein (1985) detailed studies on twins, both identical and non-identical, to see whether inferences could be drawn regarding inherited criminal characteristics. One method of study available was to look at monozygotic twins who had been separated at birth and to compare environmental factors with those genetic.

Monozygotic twins produce measurable data, because a heritable trait is inherited by both, compared to dyzygotic twins who are only as identical in traits as any other brother or sister.

One problem with looking at adopted children is that the adoptive population is not random due to the fact that children are often selected for their adoptive parents by appearance similarities and sometimes social background. This aside, chronic criminal biological parents, (those who have committed three or more crimes) are three times as likely to produce a criminal child than biological parents who have no convictions, (Wilson et al., 1985). This contrasts with adoptive parents, whose criminality does not indicate imminent criminality for their adoptive offspring; "Adoptive-parent criminality has little apparent effect on the adoptees' tendency to break the law, in sharp contrast to biological parent criminality." (The law surrounding adoptive parents in this case specified that the people wishing to adopt had no criminal convictions for the preceding five years. Thus, there may not have been enough criminal influence in the house while the child was growing up). The socio-economic status of both the adoptive and biological parents correlated with criminality.

Intrinsic variables:- Prior offending

Intrinsic variables include those variables that cannot be changed. For example, they can be something that happened in the past. In this section, variables of prior

offending are reviewed. They are considered separately from variables over which the individual has had no control, since at some point in time, the offender did have control over these variables.

Pritchard (1979) highlights a large number of variables associated with prior offending. These include; the presence or number of prior convictions, incarcerations, arrests and probation orders; age at first arrest; a presence of associates in the offense; type of prior offenses. Of these, the presence of associates is not a predictor of recidivism according to Pritchard. On the other hand, the number of prior arrests, and age at first arrest were found to be very good indicators of recidivism.

**Prior convictions**

The `presence of prior convictions` is a variable well supported with both past, and present evidence, (e.g. Hensman, 1969; Cook, 1969; Collins, 1981; Glaser, 1981; Roizen and Schneberk, 1981; McCarty & Argeriou, 1988). Glaser (1981), speaks of prior criminal record as predictive of recidivism, including prior arrests, and breaches of parole or probation. Evidence for this is apparent regardless of the type of crime, particularly because some people will start off with small crimes, and change their crime patterns as they proceed in their criminal career. Similarly, there are some people who are consistent in a crime, for example, drunk driving. McCarty et al., (1988) review this subject and provide support for

the hypothesis the multiple offenders have a increased risk of reoffending.

## Age at first arrest

`Age at first arrest` is a category reputed to be a good indicator of recidivism. When compared with outcome on parole, a first arrest before eighteen years of age is consistently related to recidivism, and a first arrest post twenty-one years is related to nonrecidivism, (Pritchard, 1979). Likewise, Decker et al. (1986) concluded that "the younger the age at which an offender began to commit crimes, the longer the duration of his or her career" [p218].

When the age crime relationship is combined with the variable alcohol, there is evidence to suggest that the onset of criminality begins at an earlier age, [e.g. Collins 1981; Temple & Ladouceur 1986]. Drinking most often begins at adolescence (Temple et al 1986), and criminal problems associated with this occur among younger men (Collins 1981). As the prevalence of use increases to a peak of around twenty years, (Collins 1981), so too occurs the peak of criminality, (Hirschi & Gottfredson 1983, Temple & Ladouceur 1986).

## Number of associates

The number of associates that a person has is, according to Pritchard (1979), unrelated to whether or not they will

become recidivists. This may be because in organised crime, the number of associates is only related to the magnitude of the crime. A large crime requires a greater number of participants although is likely to happen less often than a series of small crimes.

Acquired variables

Acquired variables are those variables over which a person has control. They can be manipulated and are sometimes dynamic in nature. The individual can dictate how they are to be.

Variables that have been identified as 'acquired' from Pritchard's list include; stability of employment, income, education, marital status, living arrangements, presence of dependents, and the use of drugs or alcohol. According to Pritchard's review, Marital status, dependents, and education are poor predictors of recidivism. On the other hand, alcohol and drug use, and employment are seen as strong predictors of recidivism.

**Stability of employment**

Employment was found to be predictive of recidivism in 93 percent of the studies reviewing this factor, (Pritchard, 1979). Employment is thus well accepted as an indicator for reoffending. In a city where the unemployment rate is high, the crime rate extends in a parallel form. It is for this reason that work skills are taught to inmates, in the hope

that they will lessen or eliminate their reoffending practices.

Criminals in general have poorer employment histories than non-criminals. Wilson et al., (1985) explain this by saying that a less legitimate course might be more financially rewarding than a legitimate course, that is assuming that there is the availability of honest work. Further, some traits consistent with the criminal population may be unappealing to a prospective employer. Even though there might be an abundance of jobs, some elements of society could find them difficult to obtain.

Income

Whether or not a person is employed, and thus his income earning capacity, is directly related to one's socio economic status. This is particularly true if the person is semiskilled or unskilled. Socio economic status grouping is often measured by the male parent's job, income, educational background, and sometimes the value of the house in which his family lives. A child who grows up in these conditions adopts the rating of his father until he himself is employed. A low socio economic status is highly correlated with crime, (Braithwaite, 1981).

Different levels of crime can occur between different levels of income. For example, those without money are more likely to steal goods to support their existence, whereas those on a good income, (and hence those likely to have a

better education) will turn to white collar crime, or crime that supports a higher cost of living above that which is necessary. Pritchard's review showed that 73 percent of studies had found that income was related to recidivism.

## Education

Schools are often seen as the training grounds for later life, and as such, delinquency and adult crimes are said to occur as a result of poor education, or failure on behalf of the school. Just as the family unit gets blamed for not raising a child with the correct values, so too is a school blamed for not re-emphasising these values. When crime statistics are viewed, (without including white collar crime) it would appear that crime declines with a greater amount of education, (Sutherland et al., 1970). United States statistics have shown that the average amount of schooling for a prisoner population is approximately two years less than that of the rest of the population, (Sutherland et al., 1970). The studies reviewed by Pritchard (1979) did not support educational achievement as being a predictor of recidivism. Education may not be a predictor of recidivism, however it is definitely a factor to do with criminality in general.

## Marital status

> The rate of commitment to prisons and reformatories per 100 000 population of the same marital status is lowest for the married, next to

> the lowest for the widowed, next for the single, and highest for the divorced.
>
> -Sutherland and Cressey (1970) p.217

To test whether people were more likely to be recidivists, studies have been completed looking at family ties during imprisonment. The conclusions of these studies are that there is a positive correlation with post-release success, (Hairston, 1988). Family ties are taken to mean, wives, parents, children, friends and so on. It is possible that a lack of support whilst imprisoned can lead to a diminishing of the faith that one can do better, with social deterioration being the result. On the other hand, families can keep a prisoner informed of what is happening, and they can also encourage him to make use of certain prison resources. Further, they can provide a home and support on release. This stability network can aid in the rehabilitation of an offender. A home environment offers support and a sense of belonging. If an offender has no home or family that he can turn to, he has an enhanced chance of becoming a recidivist. He needs personal resources like family to draw upon in the initial coping stage on release from prison.

As a married person, the responsibility that one has towards a spouse is great. The initial commitment aids in [perhaps] settling the person to a non-criminal way of life. Pritchard (1979) showed that 56 percent of the studies that he reviewed looked a this factor as a predictor of recidivism.

## Living arrangements

A much stronger predictor of recidivism is living arrangements, with 85 percent of Pritchard's studies seeing them as a predictor of recidivism. A lack of permanent home, or a home in which the other members are criminal is conducive to continued recidivism. This is because in this situation, peer pressure is issued to maintain a standard, sometimes with pride at the challenge. Further, under these conditions, the members may not know another means of survival other than a criminal one. Where there is a lack of permanent home, the offender may be forced to live by his wits, which again could involve breaking the law, - if only for survival.

## Presence of dependents

According to Pritchard (1979), the majority of studies, (53%) see this variable as unrelated to recidivism. With living arrangements being such a good predictor (85%) it is possible that without a home (which is conducive to recidivism) there are no dependents.

## Drug use

The usage of narcotics or drugs in crime is markedly high. Miller & Welte (1986) show that 60 percent of the offenders in their sample reported either use of drugs or alcohol prior to committing a crime, and Pritchard (1979) cited nine out of ten studies that recorded a 'history of

opiate use` as being a predictor of recidivism. Some researchers have speculated that in fact there is no relationship between drugs and crime, (e.g. Tuchfeld; Clayton & Logan, 1982) and that this has merely been an "assumption" of previous studies. However there is much evidence to the contrary, (e.g. Ladouceur & Temple, 1985; Argeriou, McCarty, Potter, & Holt, 1986; Miller & Welte, 1986; Speckart & Anglin, 1986; Anglin & Speckart, 1988). Rather, the relationship is a complex one and can be looked at from differing angles. Tuchfeld et al. (1982) address the concept purely as whether or not narcotics use is causal of crime, and fail to see that successful crime could commission drug purchases, thus drugs (the `effect` of crime) can be viewed as the "cause" of crime, (Smith & Stephens, 1976 cited in Speckart et al., 1986).

Drug use and crime are most often related to non violent crime (e.g. Ladouceur et al., 1985; Speckart et al., 1986), although drug dealing is not, (Miller et al., 1986). Ladouceur et al. (1985) have looked into the subject of rape, or violent sexual crime in relation to drug use, - a topic they believe has been ignored. No evidence was found to show a direct causal link between violent or sex related crimes. Tinklenberg (1973), (cited in Ladouceur et al., 1985) completed a summary of findings on the relationship between drug use and crime, and noted that several studies have shown heroin addicts to be predisposed to criminal activity, but that this is mostly non violent, moneymaking crime. Similarly, marijuana is not associated with any sort of violent crime, although there is question as to whether or not barbiturates are linked to crime.

As the use of narcotics increases, there appears to be a trend away from smaller crime towards higher yielding, more dangerous crime. According to Speckart et al. (1986), more than half of the revenue of those who were not addicted to drugs came from theft, compared to less than thirty percent of those who were. For those with high addiction levels, crimes such as forgery and dealing become realistic alternatives to theft, - again keeping away from violent crime, unless of course the need is great.

Anglin et al. (1988) studied property crime levels in view of addicted criminals. They found that property crime precedes involvement with drugs, however once addiction is established, a high drug usage is paralleled by an increase in property crime. When drug usage is either terminated or noticeably reduced, the amount of property crimes also decreases. Interestingly, "the largest increase in property crime activities during the addiction career, ... occurs at that point at which daily narcotics use is initiated". (p227 Anglin et al., 1988)

Anglin & Speckart (1986a), (cited in Speckart et al., 1986) further speculate that the amount of property crime may be influenced by the amount of drug dealing that an addict does. An inverse relationship is shown, which means that the more a person deals in narcotics, less is the amount of property crime committed. Probably, dealing is a preferred means of support, since it appears to suppress future property crime, and the inverse (i.e. property crime suppressing drug dealing) does not occur. After a relapse,

dealing is also more likely to reoccur than property crime, (Speckart et al., 1986). It is fair to say that dealing in narcotics is thus one factor predictive of recidivism.

## Alcohol use

Pritchard (1979) recognised a history of alcohol use as having an 82 percent chance of being related to recidivism, and Zelhart (1972), (cited in Beerman, Smith & Hall, 1988) indicated that about thirty or forty percent of all drivers arrested for drunk driving have a previous conviction of the same kind, [p443]. The most common crime committed by people who have used alcohol is drunk driving. Glaser (1983) also said that amongst other things, alcohol was a predictor of recidivism.

Argeriou, McCarty, Potter & Holt (1986) looked at the characteristics of three groups of men and women arrested for drunk driving. Essentially, the study aimed to compare first offenders' characteristics with those of recidivists. Argeriou et al. (1986) conclude that there are substantial differences between the two groups. Recidivists "represent a select group of individuals who exhibit a variety of problems related to or associated with their abuse of alcohol". [p134] Further, this category of offenders often had drug abuse problems. Women differed little to men in the repeat offender group, although they were more likely to have been divorced. The differences between recidivists and first offenders were obvious. First offenders did not drink as much, got drunk less often, took fewer drugs, had

greater economic resources, and were less impaired as a result of alcohol, (Argeriou et al., 1986).

The proportion of women arrested for drunk driving, [when compared to men] is small, however their number can still be high. For example, Argeriou et al. (1986) show that where women make up a mere 13 percent of those arrested for driving under the influence of liquor, they numbered 155,316 persons which is substantial. [Data is based on the F.B.I. Uniform Crime Report for 1983, - a national report, U.S.A.], (p.136, Argeriou et al., 1986).

Argeriou et al., (1985) aim to define the frequency with which certain types of offenses are committed by drunk drivers. They expect that this data can help predict 'driving under the influence of liquor' recidivists. By looking at the past records of their subjects, they found a reflection in the magnitudes and types of crimes committed with recidivism. "Generally, the more extensive the history of prior criminal justice system involvement, the greater the rate of recidivism. Individuals with no previous arrests exhibit the lowest rate of recidivism". [p528]

With a figure of approximately three quarters, [76.5%] 'prior involvement with the criminal justice system' of the drunk driving offenders in the sample, it is not surprising that most areas of offending are covered in the repertoire of these people.

The frequency of offenses which had been committed are in the following table, adapted from Argeriou et al.(1985). The percentages are absolute, as some subjects have committed an offense one or more times. The criminal histories of 1406 people are reflected in this table.

Table 2: From Argeriou et al. (1985) p.526

Frequency of offenses.

| Crime Category | Total: Percent |
|---|---|
| Person | 19.1 |
| Property | 29.3 |
| Sex | 3.4 |
| Drug | 13.2 |
| Public order | 43.4 |
| Traffic [excluding prior drunk driving] | 59.0 |
| Prior drunk driving | 27.7 |

From this table it is quite clear that serious traffic offenses are the most common with a rate of 59 percent. This category includes things like driving without a license, speeding, and endangering others. Public order offenses include; disorderly behaviour, possession of weapons without a license, and/or concealed weapons, family abuse, and delinquency crimes. More than one third of the sample had been charged with this offense, and just under one third had been charged with property offenses. Argeriou et al., (1985) found basically that criminality of one type

was generally associated with that of another. They provide statistics which show "proportions of person (70.6%), property (60.6%), sex (64.6%) and drug offenders (65.9%) who also exhibited public order offenses". Their review goes on to show where other relationships lie, for example in property offenses, and other driving offenses. Overall, the study shows that distinctions can be made between drunk drivers on the basis of their previous criminal history.

## CONCLUSIONS:

There is an obvious need to be able to predict who is going to reoffend, mainly because of the numbers of people present in our prisons who are recidivists.

The `number of prior convictions` a person has had is one of the most directly related factors to the likelihood of reoffending. Pritchard (1979) showed this in his report, and is supported in his arguments by a number of other researchers, (e.g. Greenwood, 1982; Collins, 1981; Roizen et al., 1981). Pritchard (1979) forwarded a number of variables that he considered were relevant to the recidivism problem. These were, a presence of prior convictions, stability of employment, age at first arrest, living arrangements, current income, history of opiate use, and history of alcohol abuse.

By looking at the factors suggested by Pritchard in relation to a selection of other studies, it is clear that these variables are directly related to recidivism.

The variables can be separated into two groups named `intrinsic` and `acquired`. By differentiating between these two, the factors can be viewed much more closely. Having achieved this, one can see which categories form the best predictors of recidivism. For example, personal intrinsic variables include race, sex, age, and intelligence. For all but age there is no conclusive proof that these are predictors of recidivism. `Age` on the other hand can show many things. If criminality begins at an early age, it is likely to continue.

`Prior offending` another subset of intrinsic variables highlights even more indicators of recidivism. Offense records of inmates are some of the best predictors of recidivism. Even though this category is intrinsic, due to the fact that nothing can be changed, the offender once had [complete] control over his actions, and thus brought all consequences upon himself. His first arrest predicts his [possible] continued offending. `Age at first arrest` then can be seen as the link between intrinsic and acquired variables. Although a person has no control over age (intrinsic), he does have control over when offending first begins.

An individual maintains control over acquired variables, (e.g. employment, marital status etc.). Employment is an excellent predictor of recidivism. Many of the subjects who are to be used as subjects in the present study are listed as being unemployed. Pritchard (1979) also listed it as a good predictor. Likewise `income`, which is employment related is another good predictor of recidivism.

How a person lives, (his living arrangements) is detailed as another good predictor of recidivism. Pritchard does not say whether this indicator is positive or negative, and so his meaning of "relatedness" is unclear. However, if there is an unstable home environment, - or at the worst, no home environment, the likelihood of recidivism is enhanced.

Drug and alcohol use rates highly again as a predictor of recidivism. Many crimes are initiated under the influence of these substances, for example, drunk driving, moneymaking schemes, and property crimes.

From here it would appear that the category `acquired variables`, and including `age at first arrest` and prior convictions present the best predictors of recidivism. The offender has had control over all situations. It can be concluded that personal intrinsic variables play a minor role in determining recidivistic tendency. Although intrinsic variables cannot be discounted as predictors, acquired variables remain much stronger. Moreover, `acquired` or modifiable variables may be more useful when it comes to efforts at reducing crime. The fact that some of these variables are predictive of recidivism raises the possibility that, if modified for individual offenders, the risk of recidivism will be reduced. Thus, these predictors may identify appropriate behavioural targets for psychological treatment or other correctional efforts.

Alcohol use appears in the literature as one of the most stable predictors of recidivism. It is this subject that

will be reviewed more comprehensively in the chapters following. Argeriou et al., (1985) have already shown that alcohol is used by offenders in a number of crime categories. The following chapters will determine whether or not an alcoholism rating score can be used to predict future offending.

CONTENTS

CHAPTER III

CONTENTS

# CHAPTER III

## THE DEFINITIONS OF ALCOHOL USE AND ALCOHOLISM ?

The purpose of this chapter is to examine the relationship between alcohol consumption, alcoholism, and crime. Alcohol is a feature in many crimes, especially those resulting in personal injury or violation. In many cases the victim has also consumed alcohol. Alcohol similarly features in property crime with much evidence to suggest that these two factors correlate.

This chapter will look at two types of studies. Firstly, those that discuss alcohol consumption and crime; and secondly, those that investigate alcoholism and its relationship to crime. A general idea of the literature can be gained here, and it will become clear that there are methodological deficiencies, particularly in regard to the definitions of key terms.

## WHAT ARE THE INDICATORS OF A POSSIBLE ALCOHOL-CRIME RELATIONSHIP?

Many studies have been done that look at a link between alcohol and crime. They have endeavoured to establish that there is a relationship in several different ways. Two major methods can be distinguished from the literature. The first looks at the role of alcohol in crime, and the second looks at alcoholism and crime.

When looking at the role of alcohol consumption, different approaches are taken to gather information. For example, some studies look at patterns of drinking in relation to patterns of crime, others use a self report method, and some use forensic methods. To clarify the meanings of these methods, patterns of drinking and crime studies most often evaluate groups of people and draw assumptions in line with these groups. The results of the self report testing method are based on the data provided by individuals, so rather than groups of people being compared (as in the previous method) individuals are compared. The final approach listed for gathering information is by forensic method. This means that either blood or breath tests are taken at the scene of the crime, (or shortly afterwards) that provide measurement readings for statistical or analytical purposes.

Alcoholism studies view different things. For example, they look at percentages of prisoners who are alcoholic, and also at the numbers of alcoholics who have criminal records. This is sometimes followed up with the question of whether or not alcoholics are likely to be recidivists. Studies will be reviewed as evidence of the relationship between alcohol and crime.

## Alcohol consumption and crime

Age is often used as an organising variable. This is because a great deal of the relationship between alcohol and crime is based upon when an individual first begins to

drink. For example, first criminal activity often coincides with the onset of alcohol consumption. Similarly, an offender's whole record is determined by when he first began to do certain things. There is a strong link between crime and age, and an equally strong correlation between alcohol use and age,' - hence `age as an organising dimension`. The examples in this category concentrate on the individual drinking at the time of the crime, rather than on `alcoholism`, hence `alcohol consumption and crime`. One point to note is that research in this area, and in the area of self report is influenced by the quality and type of question asked. For this reason, studies often have slightly different results, some being more comprehensive than others. One study in particular, (Temple and Ladouceur, 1986) describes the relationship between alcohol, crime, and age.

## Patterns of alcohol use and crime

Temple and Ladouceur (1986) completed a study on the relationship between alcohol and crime, looking at each area at different times in the lives of the subjects. Their main aim was to look at patterns of alcohol use and crime.

Data were drawn from a longitudinal investigation of a group of men from a county in Oregon. Of the original group, 302 persons gained delinquency records. They were followed to age 31, by which stage, 56 percent had committed at least one adult crime. Data were collected yearly in the form of mailed questionnaires. From 1967 to

1979, 67 percent of the delinquent population were retained.

**Drinking behaviour**

Drinking behaviour was not initially going to be a focus in this study, so its measurement is not as specific as current literature would expect. Regardless, Temple et al. (1986) believe that they are still able to differentiate drinkers into groups of similar proportions, as seen in other studies. For example, if other studies get results that show a certain amount of people are heavy alcoholics, Temple et al. (1986) believe their methods will show the same proportion. Their measures were derived from responses to the question "Do you drink to the point where you feel high"? Subjects answered, "regularly", "occasionally", "once or twice", or "never". Through this, drinkers could be distinguished from non-drinkers, and heavy drinkers from light drinkers.

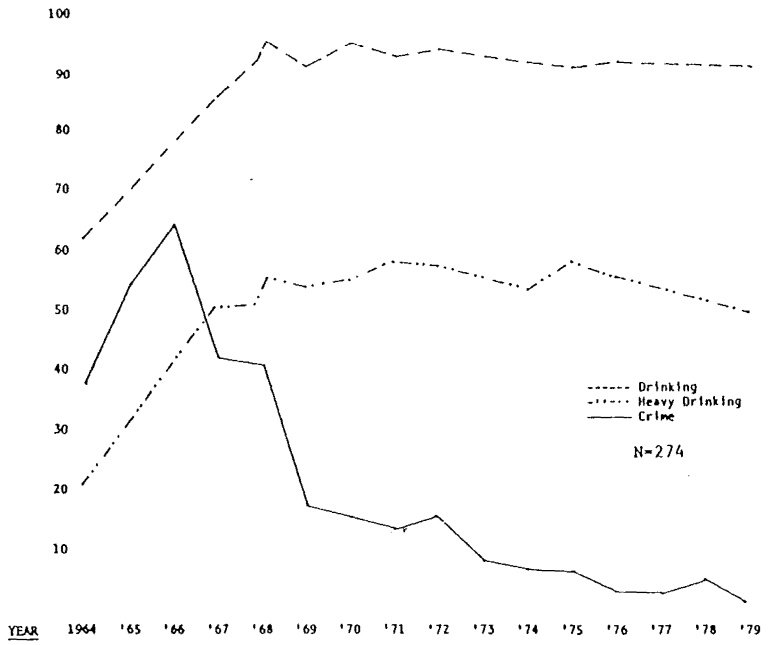
**Criminal behaviour**

Criminal records were obtained from the files of the Marion County Juvenile Justice Department. Adult arrest data were obtained from the Oregon State Investigative Bureau and the Federal Bureau of Investigation. The definition of `crime` for this study is a police arrest or court referral, - an act forbidden by law.

## Results

Results for the alcohol study are consistent with those found in other studies. An increasing number of subjects said that they drank more heavily in their later teenage years and early twenties, (See Figure 3) Sixty two percent of the sample said that they were drinking at age 16, (1964), and this rose to 95 percent by age 20, (1968). In the same period, `drinking heavily` rose from 20 to 54 percent, peaking at age 23, (1971) with 58 percent of the sample. The relationship between drinking as an adolescent and drinking as an adult was not found to be statistically significant, (r=0.08).

Figure 3 : From Temple & Ladouceur (1986) p.96
**Prevalence of drinking, heavy drinking, and crime in the Marion County cohort**



Results for the criminal study were also found to be consistent with those of other studies. The number of juvenile offenders was highest during age 16 and 20 (1964-1968). Crime dropped after age 21 and was almost non-existent by age 31.

## Intersection between crime and alcohol

The general slope of the lines in Figure 3 is similar. Heavy drinking and drinking, peak at approximately the same year. Crime peaks much earlier, though at a time when drinking was on an increase. Despite this, a causal effect cannot be assumed. Alcohol consumption does not predict delinquency (nor alcoholism), and neither can delinquency be construed as an indicator of alcohol consumption.

Alcohol may play a role in criminal activity. Sometimes the need for alcohol is a motivator for crime, and in other instances, alcohol removes inhibitions, thus facilitating crime. Overall however, it is difficult to ascertain whether or not teenage drinking patterns are predictive of later criminal activity.

Delinquency peaked for the Marion County cohort at age 18 (1966). In contrast, alcohol use peaked five to six years later, (1971-1972). There is no strict relationship between delinquency and crime, - it cannot be said that a change in alcohol consumption (for example) will be reflected in a change in the amount of delinquent activity. If there was a strict relationship, the lines on Figure 3 should parallel

each other, peaking in approximately the same place. Alternatively, the peaks and declines of alcohol consumption could precede crime, however the parallel would remain the same. This type of relationship was not found by Temple and Ladouceur (1986).

The outcome of these results suggests that the hypotheses forwarded by Cordilia (1982) and Pernanen (in Cordilia) should be investigated. That is, that there is a common set of causal factors that seem to influence the two.

> Alcohol use may indeed increase the probability of crime but it is also plausible that the commission of crime plays a role in causing people to drink or that some third factor such as stress accounts for both crime and drinking.
>
> -Cordilia (1982) p162

As Temple et al., (1986) ask, can high involvement in alcohol abuse be linked to high involvement in crime ? Their answer is "yes", with 61 percent of serious delinquents by age 19 drinking heavily. Only 42 percent of those considered least serious offenders were heavy drinkers. The differences found in all categories regarding seriousness of crime and in amount of drinking were significant at the $p=0.0002$ level.

From these results it would appear that although crime and alcohol abuse are not necessarily consistently causal, there is some association in the adolescent years. Temple

et al., (1986) looked at the relationship between these variables at age 31, and found no correlation. What is shown then is that a relationship between crime and alcohol involvement is most prominent in adolescent years.

Collins (1981) also agrees that it is difficult to draw causal inferences about the relationship between alcohol, crime, and age. He suggests like Cordilia that there are perhaps other factors that could help explain any relationship between the variables.

Self report method

The self report method is a very popular way of obtaining information for studies. Often, the method takes the form of an interview led by police or social workers. Self reports provide the advantage of first hand information, however, there are also many problems associated with them. Collins (1981) lists several. For example, people can forget things over time, especially if large quantities of alcohol were involved at the outset. Further, the quality of the answer is dependent on the quality of the question asked. This means that sometimes information that is required might not be gained if the question is unsuitable. Lastly, certain features may be over-emphasised by the person being interviewed, and others under-emphasised in a calculated distortion of the facts. For example, alcohol consumption might be over-emphasised so that the subject appears `normal` and not deviant for the crime committed , (Roizen and Schneberk, 1977). Hence, alcohol is used as the cause of a crime, and not the persons actual motives.

The self report method was used by Cordilia (1985). Interviews were conducted on a group of inmates with known alcohol problems. The inmates came from a medium and a maximum security prison in "a northeastern state". In this case, `alcohol problem` was the diagnosis for any inmate who had problems that could be attributed to alcohol, especially if these problems resulted in contact with the justice system. In this initial sample, 32 inmates were interviewed. Of these, 25 had committed a property crime. A secondary sample of inmates was also interviewed. This second set was comprised of 67 male inmates who had been imprisoned for robbery in Massachusetts. A third form of data for this study were ten biographies of criminals which focused on professional criminals (a minority group of property criminals). Case materials from other pieces of literature were the fourth source of data. A wide variety of alcohol-crime information was generated as a result of this data.

The results show that professional property criminals (for example) are heavy drinkers outside of the crime situation. Drinking most often takes place between crimes. This is explained in two ways. The first is that drinking acts as a deterrent to professional criminals, so crimes are not committed under the influence, and secondly, in the spells between crimes there is reason for celebration because a great deal of money may have been brought in. In contrast, `common criminals`, - those who commit relatively unplanned crime, who gain a smaller amount than professional criminals, and who are more likely to get

caught, are more likely to consume a lot before committing a crime. Interviewees listed several reason why they drank before crime. These include; gaining the courage to commit crime, and committing crime because drinking has made it difficult to hold employment. Group interactions and crime are maintained by drinking, - often alcohol consumption at the same venue is the only bond aside from crime that the men have. Crime in this case is an attempt to give the group some cohesiveness.

Cordilia (1985) describes the group of unprofessional criminals as having a "complex relationship between alcohol use and causal property crime". Being intoxicated facilitates crime because it makes this group unaware of possible consequences and aware only of the proposed outcome. Using the self report method for this study was beneficial in a number of ways. Firstly, an inside view of the thoughts and reasons for the committal of crime was obtained. Secondly, the criminal was able to portray events before and after the crime so that they could be analysed either separately or as a whole, and thirdly, Cordilia was able to identify differences in the drinking practices of different categories of property criminals. By doing this, Cordilia has emphasised that intoxication is conducive only to some types of crimes, and that crime in general cannot be said to be causally affected by alcohol. One of the only disadvantages with the self report method for this research was in knowing the actual extent of intoxication per group of criminals which could be considered causal of crime or causal of a type of crime. Further, it was not noted in

the script the extent of intoxication of individuals in the group. It is not known whether or not this could have made a difference.

Forensic testing

The final method of examining the relationship between alcohol and crime is forensic testing. Hollis (1974) uses this method of testing in his study. Once again the literature opens with a paragraph on the fact that alcohol plays a part in crime - in this instance, criminal homicide. The aim of this study was to establish "the significance, nature and degree of the relationship between criminal homicide and the ingestion of alcohol". (p50)

A data search was carried out on all criminal homicides in Memphis and Shelby Counties (Tennessee) over an eight year period. The typical drinking ages ranged from 16 to 70 and there were 372 cases in the population. The files of these cases contained data cards, with information regarding the victim's alcohol level, and the offender's. Both levels of alcohol were forensically determined (assuming that the offender was caught immediately). The blood/alcohol levels of 50 offenders were determined. Of the victims, 278 out of 372 (74.7%) had been drinking or were drinking when they died. Of the 50 offenders, 43 (86%) had been drinking at the time of the homicide. A positive and linear relationship is also seen in the amount of alcohol consumed by the victim. The greater the amount of alcohol consumed, the more likely the victim was to be

killed. The correlation between number of deaths, and amount of alcohol consumed is 0.99, which is very high. Dr. Joseph Canale, the director of the Institute of Criminal Justice at Memphis State University (and a former prosecuting attorney) was asked for his educated opinion and he replied:

> Alcohol is involved in a high percentage of criminal homicides and, in my observation, it is a primary factor responsible for initiating the overt criminal act of murder.
>
> -p50 Hollis (1974)

The assistant director of the Institute Henry Lux, was asked the same question on an independent occasion. He replied:

> Murder, and aggravated assault as well, almost invariably take place in an environment where the offender or victim or both are drinking. Alcohol, in my judgment, is the primary catalyst in combusting the causal elements of the criminal homicide and aggravated assault.
>
> -p53 Hollis (1974)

With these words in mind, it is accepted that alcohol can play an integral role in many crimes. People who commit crimes are not necessarily alcoholics, but are often under the influence of alcohol. This section has looked at the various ways in which research has approached the problem

of ascertaining the role of alcohol in crime. All are considered to have their own merit with each making a worthwhile contribution to the study of alcohol consumption and crime. The self report method, commonly conducted in interview form is probably one of the most popular methods although this is dependent on the type of research being carried out.

The next section will look at the role that alcoholics play in crime, by looking both at the criminal records of alcoholics, and at the amount of alcoholics in prisons.

## Alcoholism and crime

The previous section looked at the role that alcohol consumption may play in crime. Alcohol was found to be a feature in many crimes. What is not addressed in studies that look at the role of alcohol, is how many of those apprehended for offending are actually alcoholic. The reason for looking at this issue is because alcoholism is a subset of alcohol consumption. Studies show that a certain percentage of crimes are committed after a person has been drinking, but they do not say what percentage of these offenders are actually alcoholic. One question that arises is whether or not a person is more likely to commit a greater amount of crime if they consume alcohol more often than another offender ? By this logic, an alcoholic should commit more crime than a non-alcoholic, simply because he drinks more. By looking at alcoholism, further evidence is provided for the link between alcohol and crime. This evidence is needed to make the subject more comprehensive and to give it further justification.

The aim of this section is to show the differences in numbers, between those people who have been recognised in the literature as being `alcoholic` and those people who merely consume alcohol. In each case, the subjects are offenders. Following this, methodological difficulties revolving around the definition of `alcoholism` will be examined. It is important to recognise this, as many of the studies that look at alcoholism do not employ an accepted means for determining this disorder. This can hinder the

validity of results achieved. It also makes comparisons within studies difficult. For the meantime, the studies will be looked at purely at face value.

## Number of alcoholics with criminal records

> Many studies have shown that alcoholics tend to have histories of conviction for crime and that criminals having histories of alcohol misuse tend to be recidivists.
>
> McCord (1981) p739

The link between criminality and alcoholism has been recognised in literature since the beginning of this century. As cited in Goodwin, Crane, and Guze (1971), Kant (1927) found that 41 percent of his sample of alcoholics had been arrested for major crimes. Similarly, Edwards, Kyle, and Nicholls (1977) found that more than 30 percent of their sample of hospitalised alcoholics had incurred criminal records. This figure is approximate as it measures both men and women. Of the total number of women, 17 percent had criminal records, and of the men, 32 percent had criminal records, (28% of the total sample). As this is a British study, it is interesting to note that in a survey of the Alcoholics Anonymous group in London, 24 percent had been imprisoned due to their drinking practices.

Much of the crime that is committed by alcoholics can be of a trivial nature, (e.g. drunk and disorderly) however, at the same time, a great deal of very serious crime is

committed whilst people are drunk. Edwards et al., (1977) cite a Scottish study that claimed alcohol as a motivating factor in 63 percent of murder cases in which the defendant was judged as "normal".

## Number of criminals with alcoholic diagnoses

Banay (1942), in an article by Goodwin et al., (1971), found 45 percent of inmates at Sing-Sing prison to be alcoholic. It is not unusual for a high percentage of prisoners to have problems associated with alcohol. Percentages of alcoholic criminals mirror those determined for alcoholics. For example, by checklist criteria, Goodwin et al., (1971) themselves found 43 percent of their criminal sample were alcoholic. What is most interesting is that in a study by Martin, Cloninger, and Guze (1982) on alcoholism and female criminality, as many females (47%) as males in prison are alcoholic. This is interesting, because in the general population, there is only 1 percent female alcoholism. The ratio of men to women alcoholics is 5:1. Therefore the percentage of alcoholic females in prison is five times that expected in the female population.

## What is the relationship between alcoholism and recidivism ?

According to Martin et al.'s (1982) study, there is not a high likelihood of recidivism due to alcohol abuse, among female offenders. The study comprised 66 female criminals who were either on probation or parole. The subjects were

assessed and diagnosed for alcoholism, and five years later, an effort was made to follow-up the study. In this follow-up period, subjects were noted for a presence of alcohol and drug abuse, criminal recidivism and psychiatric treatment. The DSM III criteria for drug and alcohol abuse were used for diagnoses, along with other criteria. Any arrest or warrant, that was separate to crime listed at the outset of the study was considered recidivism.

Approximately half of the subjects were considered alcoholic. Of these, 35 percent were recidivists, and similarly, 31 percent of non-alcoholics were recidivists.

It was concluded that alcohol abuse is not significantly correlated with recidivism for women, which is in contrast to findings for males. "Women diagnosed alcoholic at index were no more likely to be criminally recidivistic during follow-up" (Martin et al., 1982). However, those women who continued to be diagnosed at the follow-up as alcoholics were more likely to be recidivists.

In contrast, Edwards et al., (1977) claim there is a probability that women will reoffend of 0.59. For first offenders, this percentage is likely to be significantly lower, although for multiple offenders, the probability of recidivism is again much higher. (Edwards et al.'s subjects were part of an initial 935 alcoholic patients who had been released from hospitals. The study looks at their criminal histories before and after hospitalisation, and up to the end of 1967).

For men, Edwards et al., (1977) forward a probability of 0.68 for future offending. Recidivism appears likely, due to the enhanced circumstances for being arrested, that is, under intoxication, and as a result of crime committed in these circumstances.

In a follow-up study documented in Goodwin et al., (1971), it was found that recidivism rates were higher in an alcoholic group than in a non-alcoholic group. Their present study shows that criminal alcoholics who refrain from drinking are less likely to be arrested or imprisoned than those who continue to drink heavily. There is some conflicting evidence on the relationship between alcoholism and recidivism. This could be due to the fact that the Edwards et al. study is British, and the Martin et al., American.

**Do alcoholics who stop drinking continue to offend ?**

Those criminals who go into remission, or significantly reduce their intake of alcohol, experience fewer arrests (Goodwin et al., 1971) and hence, [it is speculated] are less likely to become recidivists. For example, of remitted alcoholics, 26 percent had had no arrests since the first interview, compared to only 2 percent of unremitted alcoholics. Also, 16 percent of remitted alcoholics had had more than four arrests since the first interview, compared to 54 percent of unremitted alcoholics.

One of the main reasons for this could be that alcohol itself is usually the motivator for crime. Alcoholism (the disease), is incidental at the time of the crime to whether or not a person has consumed alcohol. It is more the consumption of alcohol that induces crime, rather than the possibly sober alcoholic committing crime.

## METHODOLOGICAL ISSUES

All of these factors constitute the basis of an alcohol crime relationship. These are the criteria that researchers are measuring in literature on alcohol-crime. However, there are problems with a great deal of the studies.

Before a piece of literature is begun, the main features should be defined, and where necessary, structured instruments for measuring the important constructs need to be obtained or developed. `Crime` is relatively easily defined by the laws which govern a country. However, even here there may be variations in law for different parts of a country. In countries such as the U.S.A., different states enforce their own jurisdictions. Thus what is crime in one state may not necessarily be illegal in another.

Alcohol consumption on the other hand, has a wide variety of definitions and subsets, one of which is `alcoholism`. Abuse of alcohol resulting in crime is insufficient evidence of alcoholism, although it is a fact that alcoholics commit more crimes than non-alcoholics. The array of definitions available highlights the fact that it

is essential to have a psychometrically proven method for determining alcoholism.

Many studies omit to use these sound measurement tools. Greenberg (1981) particularly, identifies this in her methodological critique of studies relating alcohol abuse and crime. Several weaknesses are present in research done on the relationship between alcohol and crime. These are as follows:-

1. Multiple and loosely defined concepts of alcohol use
2. Lack of uniformity in definitions of crime
3. Biased samples
4. Failure to control for relevant variables
5. Lack of information on the context in which drinking and crime co-occur
6. Inability to distinguish subgroups of alcohol users and offenders.

-Greenberg (1981) p71

For the purposes of this thesis, numbers one and three, from the above list by Greenberg (1981) are identified for expansion. Number two, - on the definition of crime, is less relevant to New Zealand studies, as one common law oversees all people living in the country. The studies that are being reviewed for this thesis in the main all use prison populations as subjects. Where they do not, criminal records are used. Thus, `crime` is defined purely by the fact that the subjects have already been seen to have broken `the law`.

`Alcohol use` is seldom given a definition that differentiates it into alcohol consumption, alcohol abuse or alcoholism. Despite this, the word `alcoholism` is frequently used, often purely in description of drunkenness. A number of studies fail to use, (or say that they have used), a proper means of testing, before claiming that their subjects are `alcoholic`.

Bartholomew (1968) noted that there are problems with the definition of terms, which makes international research difficult. For example, alcoholism, is seen by some as a disorder that has resulted in organic damage and mental deficiency, while others see it as a problem of excessive drinking over a long period of time. Essentially, the most efficient way of determining alcoholism is to use a standardised testing method. By using a testing method, it is also possible to determine degrees of `alcoholism`. By using an internationally accepted method, results can be contrasted with those of other countries more effectively.

Gibbons and Silberman (1970) are one example of researchers who do not define alcoholism. Their article, entitled "Alcoholism among prisoners" does not contain, at any point, a definition of the meaning of alcoholism, or of any other relevant keywords. Only 40 percent of 404 inmates were considered to be problem drinkers.

Mills (1989) is much the same. The alcohol histories of the defendants were examined in his study, and in interviews with the subjects, - if there was an indication

of alcohol abuse, the defendant was questioned on whether or not he thought he had a problem. None of this can actually be classed as evidence of alcoholism.

Guze, Tuason, Gatfield, Stewart, and Picken (1962) found a similar percentage (43%) of their sample of inmates to be `alcoholic`. Methodology for determining whether or not a person was alcoholic, was based on symptoms emphasised by Jellinek (1946) [cited in Guze et al., 1962]. The authors themselves speculate that there may have been more alcoholics than the criteria identified. "There were an additional 25 men who were suspected of alcoholism but who failed to meet the above diagnostic criteria", (Guze et al., 1962). This suggests that there may be room for improvement in the test. Interestingly, Goodwin et al., (1971) used the same testing procedure (from Jellinek 1946). In the first testing they also found that 43 percent of the men were alcoholic, with a possible 11 percent extra.

The fact that in each of these cases there can be such a high possible error rating is one reason for proposing that a standardised testing method be used. Thus, even though a person might not be considered `alcoholic`, he is given a score that reflects exactly how excessive his drinking practices are. Poor definition of what is meant by alcohol use, is likely to hinder the validity of studies, and conclusions that can be drawn from them.

There are other problems inherent in literature on the alcohol crime relationship, (point three on Greenberg's list). For example, most studies that look at alcohol and crime evaluate a prison population. This is biased because excessive drinkers may have an enhanced chance of being caught and sent to prison. Thus, results reflect only the number of alcoholics in prison, and not the number of criminals who are alcoholic, (Greenberg, 1981). It is for this reason that it is as important to look at the number of alcoholics with criminal records, to see where [or if] the numbers correlate. This feature should be distinguished in the literature.

## Michigan Alcoholism Screening Test

The Michigan Alcoholism Screening Test, (MAST) (Selzer, 1971) is a diagnostic instrument used for determining degrees of alcoholism. It is structured, and therefore does not use informal criteria. The MAST is considered psychometrically sound.

The MAST contains a list of twenty five questions in its full form which require either yes or no responses. The questionnaire is administered in an interview form and usually takes about fifteen minutes. Very little training is required to be able to use this test which means that it has been used successfully in the past by students, research assistants, doctors' receptionists and so on, (Jacobson, 1976). Questions in the test are to the point and therefore not open to misunderstanding. They are

weighted from zero to five, and three of them have direct diagnostic status, (Jacobson, 1976). The total possible score that a person can get is fiftythree. A score of three or below means the person is not alcoholic, a score of four indicates that alcoholism is a possibility, and a score of five or more suggests that the person should undergo a comprehensive alcoholism assessment test. Some studies have chosen to vary these cutoff points. This will be shown later.

## Reliability of the MAST

The MAST has a reputation for reliability. Reliability is "the consistency of an individual's reporting of drinking behaviour both within a single assessment (internal consistency) as well as between two assessment occasions (test-retest)", (p1157 Skinner and Sheu, 1982).

Skinner (1979) had a sample of 418 men and women alcoholic and drug addicts. He broke this group into two samples, (A and B) and administered the MAST to both. The purpose of sample A was to examine the internal properties of the MAST. Sample B was used to determine external correlates of the MAST. The internal consistency estimates, - coefficient alphas, under regular scoring and unit scoring were 0.90 and 0.93 respectively. Both of these scores are quite high. The scores show inter-item consistency, that is "the stability of a person's responses to all items on the scale", (Skinner, 1979).

Skinner et al., (1982) used the test-retest method for determining the reliability of the MAST. They had a sample of 83 randomly selected individuals who had voluntarily sought help at an Addiction Research Foundation in Toronto. Results showed reliability coefficients of 0.84 with an average interval of 4.8 months. Thus, the MAST does well on both internal consistency and test re-test reliability.

Validity of the MAST

The sensitivity of the MAST at identifying diagnosed alcoholics ranges from 79 percent (Zung, 1982) to 100 percent (Benussi et al., 1982) with only one identified exception of 57 percent sensitivity by Rounsaville et al., (1983) [all cited in Hedlund & Vieweg, 1984]. It is quite acceptable that with few exceptions, hospitalised alcoholics are diagnosed with 100 percent sensitivity, because the question "Have you ever been in hospital because of drinking"? is worth five points which is the proposed cutoff for alcoholism. However, sensitivity for out-patient alcoholics was recorded at 97 percent which is also very high, (Pottenger et al., 1978, cited in Hedlund et al., 1984), and 90 percent for alcoholics attending an education course, Friedrich et al., 1978, cited in Hedlund et al., 1984).

As a measure for distinguishing alcoholic from non-alcoholic groups, there has also been success. Selzer (1971) [Hedlund et al., 1984] found that a score of five or more identified 98 percent of alcoholics in a sample, and

four or less, (the score for a non-alcoholic) in 95 percent of a control group. That is not to say that results are always as high as this. Hedlund et al. say that the ability for it to predict non-alcoholics varies from 36 to 95 percent over a number of studies. As always, there may be a large number of false positives. It is further possible that the MAST overdiagnoses serious alcohol problems.

The MAST is very widely used for identifying alcoholics in a number of groups. One possible reason for its popularity, is that few people have questioned its validity and reliability, (Jacobson, 1983). A New Zealand study conducted by Brown (1979) [cited in Jacobson 1983] that used the MAST found a high degree of false positives, (for example, 24 percent of psychiatric patients without prior alcoholic diagnoses were diagnosed alcoholic). This suggests that the weightedness of the marking guide may have to be changed in order to fit the cultures of different countries. Brown suggests that scores in the range of four to ten could be classified as indicating a problem, but not necessarily alcoholic, (Jacobson, 1983).

## Studies that have used the MAST

Despite possible problems with the scoring of the MAST in different countries, (e.g. Brown cited in Jacobson 1983) it remains widely used, and for a variety of populations. Several studies are relevant to the present. For example, Swett (1984) conducted a study in the security ward of a prison hospital. The patients usually had a psychiatric

diagnosis and history of violence. Not all of the patients were convicted offenders, - some had been admitted from other hospitals because of violent behaviour. This makes up a very small amount of the total group, (14 out of 214). On the whole, the group comprised convicted offenders.

Of those who were convicted offenders, 70.7 percent were rated as alcoholic by the MAST with a criterion score of five, and of these, 57.8 percent had scores above ten. Swett (1984) points out that criminals all attained higher results on the MAST than did non-criminals. According to Swett, there are a number of reasons why the MAST scores are so high, mostly to do with the various illnesses that affect the subjects.

Problem drivers were the subjects of a study by Selzer, Vanosdall, and Chapman, (1971). This group was chosen because of the high correlation of alcohol consumption to road accidents. All of the subjects were summoned for a `Driver Improvement` course after they had received twelve penalty points for traffic offenses, or had had a greater than normal amount of traffic accidents in the previous two years. It was expected that testing would reveal a high percentage of alcoholics in this group.

It was found that 21 percent of the group were alcoholic, or probably alcoholic, (using a cutoff of four or above). A quarter of the entire group had previous convictions for alcohol related crimes, (drunk and disorderly, and driving under the influence of liquor). Of this quarter, 60 percent were alcoholic or probably so.

Thus, it can be said that 60 percent of the `criminal` group were alcoholic. This compares with studies based in prisons (as discussed earlier) that have not used psychometric testing methods, and have revealed a far smaller proportion of alcoholics. For example, 40 percent of the Gibbons et al., (1970) sample, and 37 percent of Mayfield's sample [in Roizen et al., (1978)] were classed as alcoholic. There appears to be a large discrepancy between what the MAST predicts, and what less formal measures predict.

Selzer et al., (1971) expect that the MAST is least sensitive with young people as they have not experienced the personal and social problems that often develop with prolonged drinking. Because 53 percent of the group were aged less than 24 years, it is possible that their `alcoholic` tendencies were not identified. Selzer et al., (1971) describe the test as effective at determining alcoholism in this sample, although emphasise that percentages should have been higher.

McLean (1988) used the MAST on a group of New Zealand prison inmates. Again, a percentage of 71 was revealed, - more in line with that of Selzer et al., (1971) than the other studies. One would expect that McLean's percentages would be higher than Selzer et al., (1971), due to the fact that he used a `true` criminal population (i.e. those who were incarcerated at the time of testing). McLean believed that this percentage was too high, and that the test needed to be more in tune with New Zealand drinking practices in

order to show a correct degree of alcoholism in inmates. To counter this problem, he suggested raising the cutoff point for alcoholism to seven. This resulted in approximately 50 to 60 percent of the inmates being classified alcoholic, - again, still considerably higher than those percentages of informal tests.

## CONCLUSIONS

The aim of this chapter was to show how definition can be the key to outcome. `Alcohol consumption and crime` has been differentiated from `alcoholism and crime`. Alcohol consumption refers purely to whether or not an individual consumed alcohol before committing a crime. The amount of alcohol consumed often fluctuates with age, and as a parallel, so does criminality. It is pointed out that a causal relationship cannot be assumed between alcohol consumption and crime. Drinking does not necessarily lead to crime.

Approximately 30 percent of alcoholics are said to have committed a crime at some stage. Likewise, about 40 percent of prisoner populations are alcoholics, (or said to be by the bulk of literature). With regard to recidivists, alcoholics make up a higher percentage of the recidivist group (per head of alcoholics) than do non alcoholics. However, if an alcoholic discontinues drinking, he is less likely to be a recidivist.

In many of the studies that have been reviewed, there are methodological difficulties. Several fail to define concepts by means of an internationally accepted framework. Without this, confusion occurs with the validity of many results. Further, it becomes difficult to compare results of studies that seemingly have the same aims.

To give consistency to studies of the relationship between alcohol and crime, this study proposes the use of the MAST. Though again not perfect, the MAST is a well respected, reliable and valid test of alcoholism. It has been used on a wide variety of samples, giving appropriate results.

The MAST identifies a greater number of alcoholics in populations than less standardised tests. It is known that the MAST can sometimes over predict, especially if the cutoff point for alcoholism is too low, though this cannot be rated as a bad thing. For example, falsely predicting an alcoholic in a group of poor drivers (those who have had several accidents) is better than not predicting an alcoholic. In any case, this feature of the MAST will not be a problem for the present study. This is because classifying individuals makes use of a cut-off score. In the analyses that follow, the scale of scores and not various cutoff points for alcoholism are used.

McLean (1988) used the MAST on a group of New Zealand prisoners. His results were similar to those of Selzer et al., (1971) identifying 50 to 60 percent of inmates as

alcoholic. This is in contrast to those studies that have not used standardised testing procedures, where approximately 40 percent of prisoners were identified as alcoholic, (e.g. Gibbons et al., 1970).

The MAST identified more alcoholics than other tests, and is at the present, one of the most efficient and easily administered tests of its kind.

CONTENTS

CHAPTER IV

# CHAPTER IV

## CONCLUSIONS AND RATIONALE FOR THE PRESENT STUDY

The aim of Chapter 1 was to show why it is necessary to be able to predict those most likely to reoffend in the future. One very important reason is that if predictions can be made, resources can be directed towards the rehabilitation of those individuals with the aim of reducing recidivism. In the present day, resources are very limited. For this reason, it is necessary to use them as efficiently as possible. This means that only those most likely to respond to treatment, and those most likely to reoffend, be allocated these resources.

Selective incapacitation was proposed for similar reasons. To use resources more efficiently, those likely to reoffend are `selected` and imprisoned before those who are unlikely, or less likely to reoffend.

Targeting areas which could be related to recidivism for those offenders most likely to be recidivists is another way of reducing the chance of reoffending and using resources more efficiently. If inmates' rehabilitation focuses on those areas in which they require help then they may be less likely to become recidivists. The idea then is to firstly decide which inmates are most likely to reoffend, and to then determine the areas in which their problems lie.

Many things are considered predictive of the tendency to reoffend. Often they can be the problems that were identified in Chapter 1. The aim of Chapter 2 was to look at predictors of recidivism. This information again, helps in the distribution of limited resources and in the general identification of recidivists.

Chapter 2 endeavoured to show how recidivism could be predicted. Information is required about inmates' patterns of offending. By doing this one can see how likely the person is to commit a similar crime. For example, if an offender has been convicted a number of times for theft, it is more probable that his subsequent crimes will be theft and not for example, rape.

There are several predictors of recidivism that Chapter 2 identified. These variables were divided into two categories; intrinsic and acquired. Intrinsic variables were variables over which the offender had no control and included race, sex, age, intelligence, and family criminal record. Acquired variables on the other hand included things over which the offender had once had control, or currently had control. These included; prior convictions, age at first arrest, number of associates, employment, income, education, marital status, living arrangements, presence of dependents, and drug or alcohol use.

Of these variables, the strongest predictors of recidivism included, number of prior convictions, stability of employment, age at first arrest, and history of drug or alcohol use.

It was decided that all of these variables except stability of employment and drug use would be followed up in the present study with a special emphasis on the history of alcohol use.

The aim of Chapter 3 was to outline the relationship of between alcohol consumption, alcoholism and crime and from here to look at the methodological difficulties encountered in measuring these concepts. It also gave an indication of the number of crimes that involve alcohol and also percentages of criminals who are alcoholics. Alcoholics are also identified as being more likely to be recidivists than non-alcoholics.

Upon reviewing the literature it became clear that many of the studies that look at this topic did not define their concepts adequately. The fact that alcoholism is a problem in crime was accepted by all researchers, however their methodology often appeared questionable. The concept of alcoholism can be taken to mean several things which is why the present study found it necessary to research, and subsequently employ a standardised testing method called the Michigan Alcoholism Screening Test.

One noticeable feature in the study of crime is that researchers usually evaluate prior offending records. It is clear however, that in order to evaluate recidivism, followup studies must be done. In this case, we want to show that alcohol abuse is associated with recidivism, or rather, that a high MAST score is associated with a high

number of subsequent crimes. The present study will aim to address this question. By using the MAST it is also ensuring that some of the methodological problems described in Chapter 3 will not occur.

## McLEAN'S STUDY

The present study is a follow-up to one completed by McLean (in press). Because this study has not yet been printed, it will be described below.

McLean used the Michigan Alcoholism Screening Test as a measure by which the extent of alcohol abuse for a group of criminals could be explored. Criminal conviction histories for 126 male inmates were obtained and from these, the number of convictions and court appearances for different types of offenses were calculated for each individual. By looking at the number of offenses committed, and studying this in relation to scores on the MAST, McLean was able to determine what sorts of offenses might be alcohol related.

For each offender, a rate of offending was determined by calculating a timebase, - the number of months between the sixteenth birthday, and admission to prison. None of the offenders in McLean's sample had been incarcerated previously. This was their first imprisonment. The number of charges and court appearances that resulted in conviction for any of twenty-six offense categories were also counted. McLean established these categories after reading and sorting the offense histories of the criminals.

For each offender, criminal activity was then described by four measures. These were, "1) Rate of conviction (number of convictions in a category divided by the timebase described above), 2) Rate of court appearances resulting in one or more convictions (number of appearances divided by the timebase), 3) Proportion of all a person's convictions that were for each of the twenty six categories, and 4) The proportion of all a person's court appearances that resulted in one or more convictions for each of the offense categories". By doing this, McLean could see how much offending was occurring, and any areas of "specialisation" for each offender.

To determine the association between alcohol abuse and each of the twenty six offense categories, McLean has documented correlation coefficients for total MAST scores against the rates and proportions of specific criminal acts. Of the twenty six categories, offenses committed significantly more frequently by those individuals who had high MAST scores were; assaults, intimidation, disorder or assembly offenses, rape, alcohol offenses, vehicle theft, theft, breach of probation or periodic detention, driving under the influence of alcohol, and driving while disqualified. Bakker (note 1) replicated this study with a different group of offenders and obtained very similar results. The same offenses that McLean highlighted as being alcohol related also usually correlated well in the study by Bakker (note 1). This suggests that there are particular offenses that are significantly associated with alcohol abuse.

## PRESENT STUDY

McLean tested the offenders that are to be used for the present study using the MAST during 1983. In his study he looked at the conviction histories of the inmates up until their imprisonment. Files for all these offenders were taken from the Wanganui computer again in April 1990 in order to evaluate the number and types of offenses that have been committed in the interim. The aim of the present study is to see whether the results of the MAST are predictive of future offending. It is hypothesised that a high score on the MAST in 1983 would be predictive of future offending.

By examining the prior criminal records of the men who were administered the MAST, McLean in his study looked at whether the score was predictive of certain types of offenses. Using McLean's data on the MAST, we shall measure whether or not it is a good predictor of future offending, particularly with respect to those offenses that McLean showed to be related to a high score on the MAST.

In addition to measuring whether or not the MAST is good at identifying recidivists, other variables will be studied which might also be accurate predictors. For example, variables such as age at first arrest, and number of prior convictions (Chapter 2) will be weighed against MAST scores to ascertain which could be the more efficient in predicting recidivism. It is possible that even though a high score on the MAST is predictive of future reoffending,

past offending might be a stronger predictor thus making the the MAST score less useful as a predictor.

Several measures are being used in this work to help study the alcohol crime relationship. The first is the number of court appearances between 1983 and 1989. This is essential because it reflects the amount of offending committed by any one person. Two conviction categories were formed from the total number of court appearances. The first contained convictions that were alcohol related, (i.e. resulted in conviction for offenses that McLean found to be correlated with MAST score) and the second contained those that had not been shown to be alcohol related. In cases where there were several charges against a person at one court hearing, the court appearance was considered alcohol related if any one of the charges was statistically shown to have been `alcohol related` by McLean.

Further, the number of imprisonments for the period 1983 to 1989 is being recorded to see whether a high MAST score will not only be reflected in a higher number of court appearances, but also in a higher number of imprisonments. To be imprisoned means that the crime that was committed was a serious, whereas only general recidivism is shown when counting court appearances.

Age at first conviction is used as a predictor in the present study because Chapter 2 concluded that the younger a person began offending, the more probable it was that he would continue to offend. Several other studies also

support this idea. `Age when the MAST was administered` is being used as measurement point because this indicates the age of the offender when first imprisoned. This age can also be used as a predictor of whether or not the person is likely to offend in the future.

For all offenders, criminal histories are also being calculated for the four years prior to being tested on the MAST. Four years was taken as a cutoff point because all of the offenders had a least four years of prior convictions before being tested on the MAST. Further, this gives a consistency between offenders that would not be present if entire criminal histories were viewed.

In the course of the evaluations, the MAST will be viewed both by itself as a predictor of recidivism (using simple regression) and in comparison to several other predictors of recidivism (using multiple regression). These include some of those variables outlined in Chapter 2. The reasons for doing this kind of research were made clear in Chapter One.

## CONTENTS

## METHOD

### Subjects

In the original study by McLean (in press), 129 male inmates from a minimum security prison participated as subjects. Initially it was expected that the same number would take part in the present study once criminal files had been taken off the Wanganui computer. However, eight files had to be disregarded leaving 121 men to form the subjects for the present study. The reason that some files had to be disregarded is that conviction histories did not match with what was expected from McLean's records.

When McLean first interviewed the men, they had a mean age of 26.2 years (SD 7.25), (McLean, 1988). At their first conviction, the men had an age range from 13.5 to 57, with a mean of 19.83, (SD 6.83). When the present study was begun, they were six years older than this.

### Materials and Procedure

The Department of Justice Psychological Services made available the conviction records of the inmates in April 1990, approximately six years after offenders were administered the Michigan Alcoholism Screening Test (MAST). In one instance only, the Ministry of Transport record of an offender has been used instead of the police record.

The records were perused and information relevant to this study drawn from them and stored on file. Information included:-

1. The prisoner identification number, (prn).
2. The number of court appearances between 1983 and 1989 (i.e. general reoffending).
3. The number of imprisonment offenses between 1983 and 1989 (i.e. serious reoffending).
4. The number of court appearances for offenses shown to be alcohol related (McLean, in press), from 1983 to 1989.
5. Number of court appearances for offenses that were not shown to be alcohol related (McLean, in press), 1983 to 1989.
6. Age at first conviction.
7. Number of offenses in the four years up to being tested on the MAST.

In addition to this information, McLean provided extra information regarding the MAST score. Thus,

8. MAST score.
9. Age when tested on the MAST.

were also stored with the information from the prisoner files.

These variables were then used to study the relationship between measures of reoffending (e.g. numbers 2, 3, 4 and 5 of above), and potential predictors of reoffending (e.g. numbers 6, 7, 8 and 9). This was done by using both simple and multiple regression.

CONTENTS

RESULTS

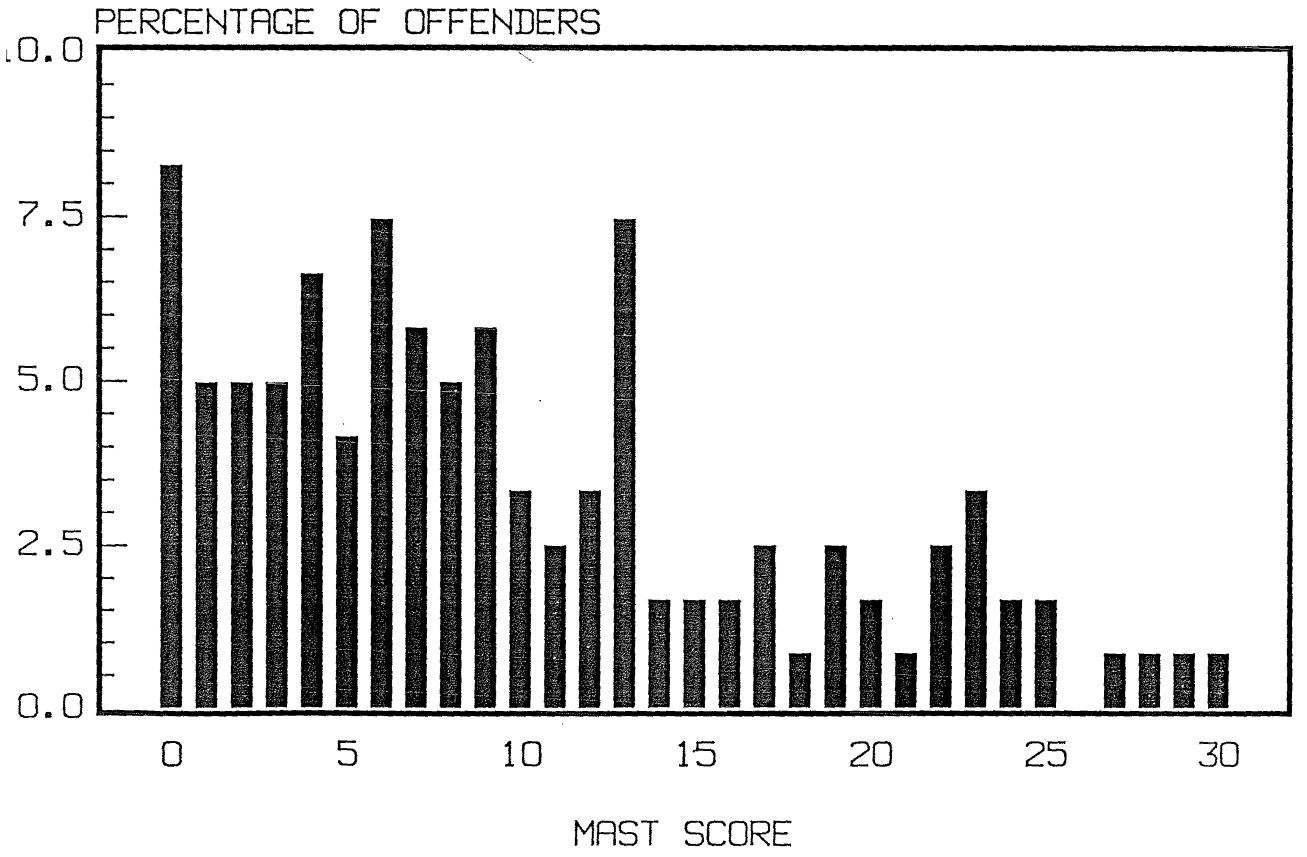
## RESULTS

Results will be presented in two sections. The first gives a description of the distribution of each of the variables that were studied, (e.g. MAST score, age at first conviction, and so on). The second section will look at regression analyses using these variables, in particular, the MAST as a predictor of recidivism in comparison to other known predictors.

### Part One

MAST

Figure 4 MAST SCORES IN 1983 (N=121)



The distribution of MAST scores is given in Figure 4. This shows that there is a range from zero to thirty with a mean score of 9.85 (SD 7.73).

The graph indicates that a large proportion of the prisoners are `alcoholic`. In fact, where five is the recommended cutoff point for alcoholism (Selzer, 1971), approximately 76 percent of the subjects in this sample are considered alcoholic. Selzer, Vanosdall, and Chapman (1971) used a cutoff of four for their study on problem drivers to highlight those persons who were `alcoholic, or probably alcoholic`. If this logic is applied to the present group, 82.5 percent fall into this category.

Age at first conviction

Figure 5 shows the distribution of ages when offenders were first convicted for criminal activity. It is not necessarily a record of an offender's first imprisonment nor of his first crime. Ages range in this category from 13.5 years to 57 years with a mean of 19.83 (SD 6.83).

Figure 5 shows people are less likely to begin their criminal activity after about age 22. Of the subjects in this study, 81 percent had committed a first offense by age 22 or earlier. Of those who committed crimes earlier, 57 percent (of the 81%) had committed a crime by age 18.

## Age when the MAST was administered

Figure 6 shows the ages at which the MAST was administered. (When reference is made to reoffending, this indicates convictions subsequent to being tested on the MAST). Because the offenders were all imprisoned at this stage for the first time, Figure 6 also indicates age at first imprisonment. From this it can be seen that, although most criminals had committed a first offense by age 22, the majority were not imprisoned until approximately age 28. The range of ages for the administration of the MAST are 19 to 57 years, with a mean of 25.78 (SD 7.11). These figures are slightly different to those noted in McLean (1988) because of the reduced number of subjects. It was said above that the youngest offender in the sample was 13.5, however, when imprisoned, the youngest offender was 19. The group mean has also risen accordingly, with standard deviations remaining similar. This suggests that up to six years can elapse between initial offending and first imprisonment.

## Court appearances in the four years prior to being tested on the MAST

Figure 7 indicates that 37 percent of the offenders were convicted either once or twice in the previous four years and 21 percent were convicted at least seven times. The number of convictions during this period ranged from one to fifteen with a mean of 4.41 (SD 3.32).

Figure 5 AGE AT FIRST CONVICTION (N=121)

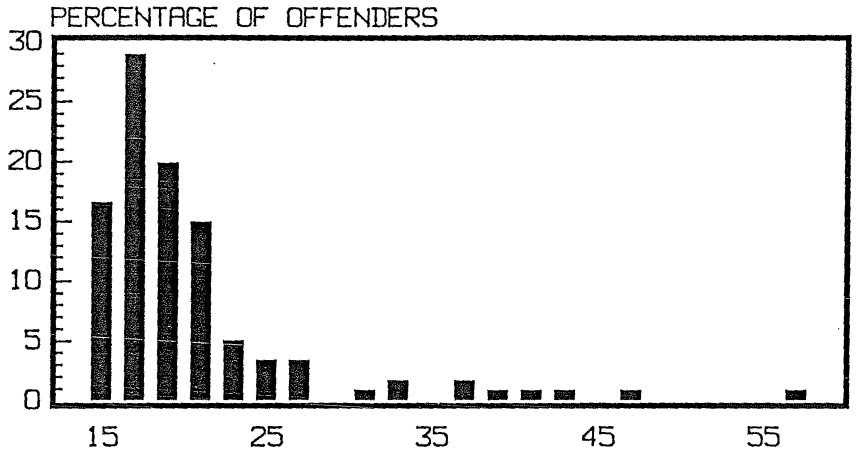



Figure 6 AGE WHEN MAST WAS ADMINISTERED (N=121)

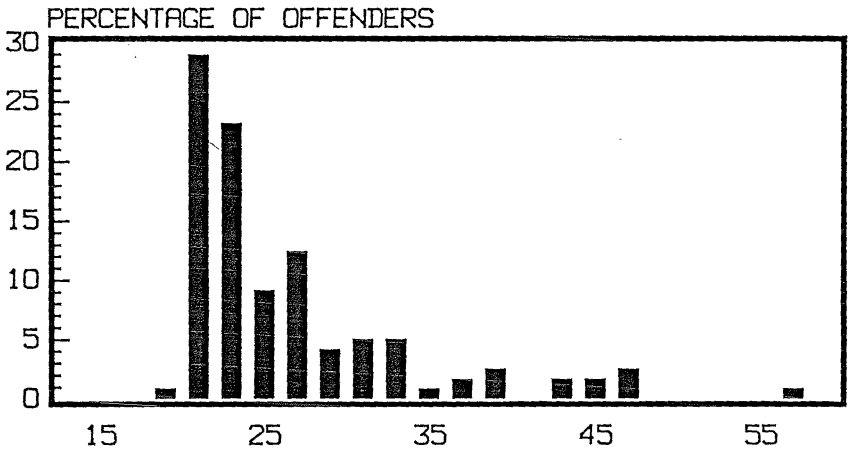
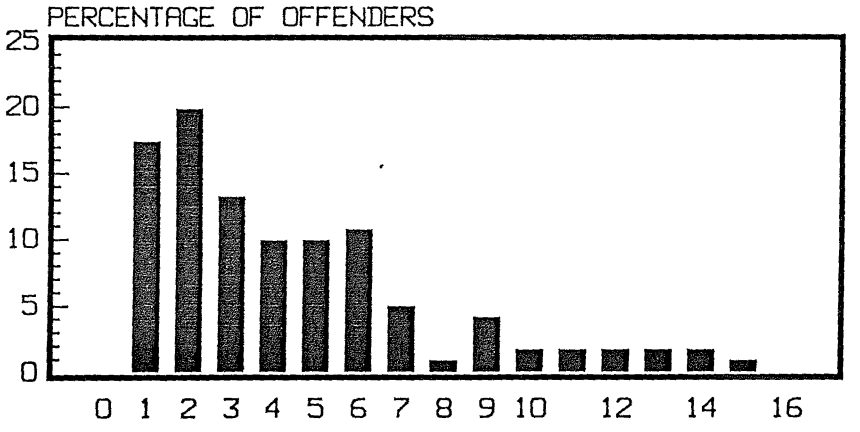



Figure 7 NUMBER OF COURT APPEARANCES IN THE FOUR YEARS PRIOR TO TESTING WITH THE MAST (N=121)



Four years prior to being tested on the MAST was taken as a cutoff point because all the offenders had been convicted for at least one offense in this time. This also had the effect of standardising the time period for all offenders so that they could be more accurately compared.

## Court appearances resulting in conviction 1983-1989

Figure 8 shows a distribution of numbers of court appearances, after testing, for the group of 121 offenders. Twenty seven percent of offenders were not convicted again after 1983. One offender, (0.83%) was convicted 14 times in the period between 1983 and 1989. The average number of convictions for the group was 3.22 (SD 3.52). 42 percent of the sample had three or more convictions in the six years after their first imprisonment.

## Court appearances resulting in imprisonment 1983-1989

Figure 9 gives the distribution of numbers of imprisonments subsequent to being tested on the MAST. Approximately 67 percent of the sample were not reincarcerated. Of the remaining 33 percent, some were incarcerated up to five times between 1983 and 1989. The mean number of incarcerations for the group is 0.54 (SD 0.98). Seventy percent of those imprisoned were imprisoned only once.

Figure 8 COURT APPEARANCES RESULTING IN CONVICTION 1983-89 (N=121)

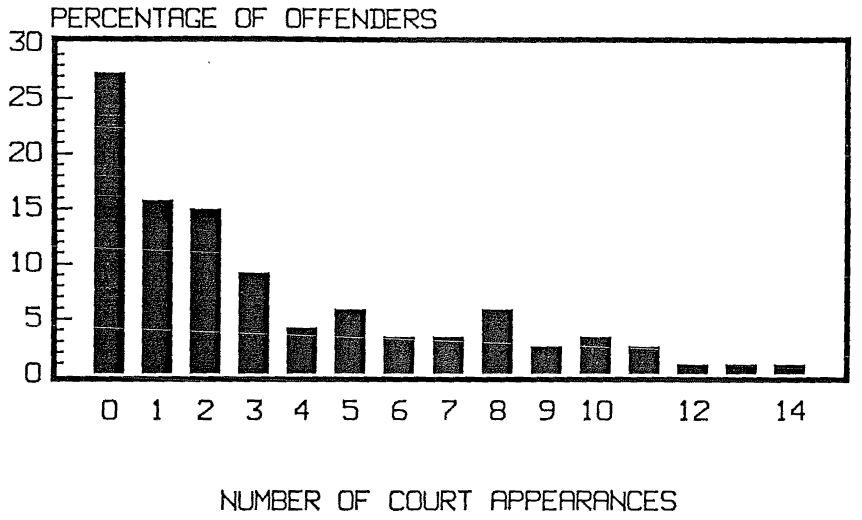



Figure 9 COURT APPEARANCES RESULTING IN IMPRISONMENT 1983-89 (N=121)

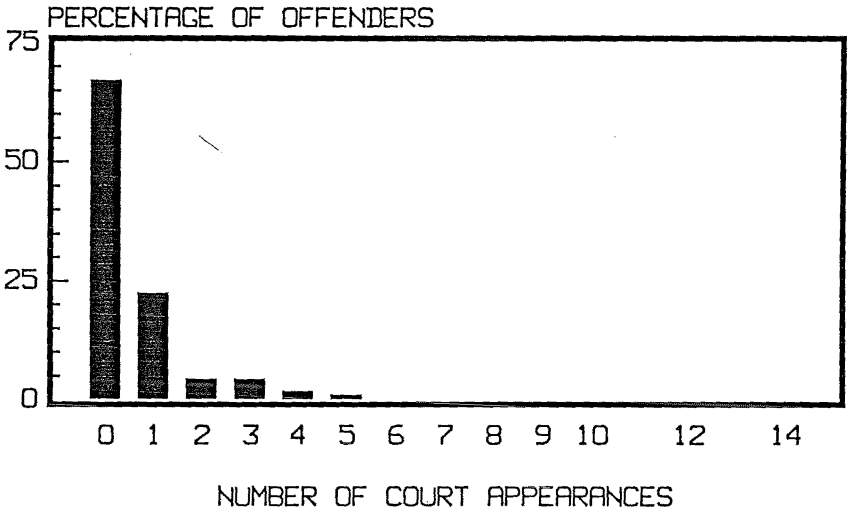
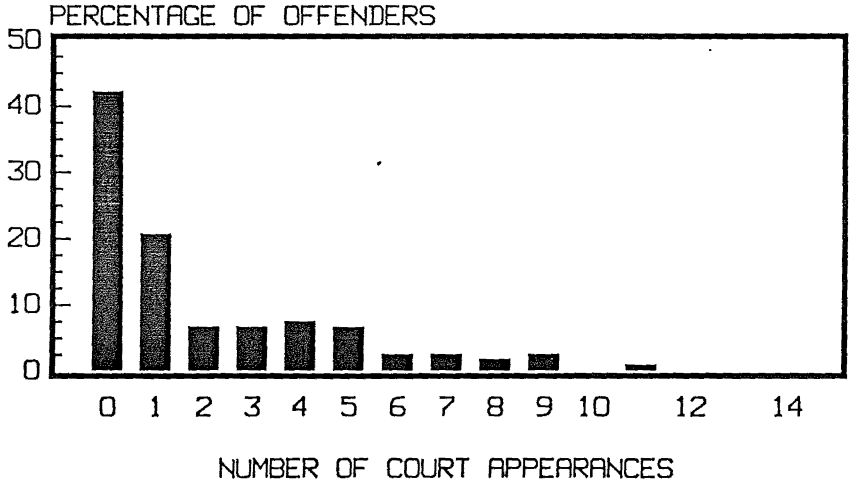



Figure 10 COURT APPEARANCES RESULTING IN CONVICTION FOR 'ALCOHOL-RELATED' OFFENCES 1983-89 (N=121)



**Court appearances resulting in conviction for `alcohol related` offenses 1983-1989**

`Alcohol related` is any offense that was shown to be related to MAST score by McLean (in press). For example, `driving while disqualified` and `assault` are alcohol related offenses. The distribution for these offenses is given in Figure 10.

Figure 10 shows 43 percent of the offenders had no further convictions for alcohol related offenses, 22 percent had one, and 35 percent had two or more court appearances for alcohol related offenses. The number of court appearances for alcohol related crimes ranges from zero to eleven convictions with a mean of 1.93 (SD 2.53).

Part Two

The second part of the results section involves looking at the regression analyses of variables. By doing regressions, it is possible to analyse the amount of variance in the dependent variable that is accounted for by using the information available on one or more independent variables, (Pedhazur, 1982). Simple regression was used initially to see what effect each independent variable would have on each dependent variable, prior to determining which variables were better at predicting recidivism. (i.e. through multiple regression).

The predictor (independent) variables are; MAST score, [MAST-scr]; age at first conviction, [AGEAT1st]; age when tested on the MAST, [AGEATest]; and the number of court appearances that each offender had had in the four years prior to being tested on the MAST, [CAlast4y]. With these variables, it is hoped that predictions can be made regarding the following (dependent) variables; number of court appearances from 1983 to 1989, [CAs8389], (i.e. general recidivism); number of imprisonments from 1983 to 1989, [IMPs8389], (i.e. serious recidivism); number of alcohol related offenses between 1983 and 1989, [ALCREL]; and the number of non-alcohol related offenses between this period, [CAnonalc]. The correlations between each of these variables is shown in Table 3.

The independent variables proved very successful in predicting the number of court appearances between 1983 and 1989, that is, general recidivism. Age at first offense, age when tested on the MAST, and court appearances in the four years prior to this, all showed correlation coefficients of $r = -0.327$ or better ($p < 0.001$). The MAST score as a predictor was not quite as good as the other variables, although still significant at $p < 0.05$.

Table 3: Simple regression correlations between all dependent and independent variables.

| Variables | R(X,Y) | Probability |
|---|---|---|
| CAs8389-MAST-scr : | .195 | .032 |
| CAs8389-AGEAT1st : | -.327 | .000 |
| CAs8389-AGEATest : | -.330 | .000 |
| CAs8389-CAlast4y : | .535 | .000 |
| IMPs8389-MAST-scr : | .064 | .487 |
| IMPs8389-AGEAT1st : | -.187 | .040 |
| IMPs8389-AGEATest : | -.237 | .009 |
| IMPs8389-CAlast4y : | .257 | .004 |
| ALCREL-MAST-scr : | .188 | .039 |
| ALCREL-AGEAT1st : | -.291 | .001 |
| ALCREL-AGEATest : | -.285 | .002 |
| ALCREL-CAlast4y : | .506 | .000 |
| CAnonalc-MAST-scr : | .130 | .155 |
| CAnonalc-AGEAT1st : | -.255 | .005 |
| CAnonalc-AGEATest : | -.271 | .003 |
| CAnonalc-CAlast4y : | .371 | .000 |

Serious recidivism (imprisonment) was not predicted as well by the independent variables as general recidivism. For example, MAST score was found to be not significant, and the other variables were significant to $p < 0.05$.

For the category of offenses where alcohol has been shown to be related to rate of court appearances (McLean, in press) there is greater variability between the predictions of the independent variables. For example, number of court appearances in the four years prior to being tested on the MAST was extremely significant, $p < 0.001$, age at first conviction was also very significant, $p = 0.001$, and MAST score and age when tested on the MAST were significant at $p < 0.05$.

In the case of offenses that were not related to MAST score in McLean's study, results are interesting. MAST score was not significant, court appearances in the four years prior to being tested was very significant, $p < 0.001$ and the remaining two predictors were significant to $p < 0.05$. MAST score was not expected to be of any use in predicting offenses `not shown' to be alcohol related`, because as an alcoholism screening test, it is more likely to identify those offenders who have committed alcohol related offenses. As was seen above, the MAST did significantly predict those that had been shown to be alcohol related, ($p < 0.05$).

After completing the simple regressions, it is clear that the number of court appearances in the four years prior to being tested on the MAST is the best predictor of each type of recidivism, - serious and general. The MAST score, although giving significant results for two of the four categories, and predicted results for one of the four categories does not at this stage appear to have the

predictive power of the other independent variables. In order to ascertain exactly how much power the MAST score has, and each other independent variable, multiple regressions were conducted.

The first multiple regression to be done used all four independent variables, and number of court appearances from 1983 to 1989 as the dependent variable. Number of court appearances in the four years prior to being tested came out as the only significant independent variable ($p < 0.001$). Upon viewing the inter-correlation matrix, it was noted that age when tested on the MAST, and age at first conviction appeared to be testing the same thing, ($r = 0.731$). Simple regressions were reviewed and it was found that in these, (also with court appearances from 1983 to 1989 as dependent variable) the R(X,Y) values were virtually the same, -0.330 and -0.327 respectively, (see Table 4). It was decided that `age at first conviction` would be omitted from further analyses. Following this, the multiple regression for number of court appearances from 1983 to 1989 was redone, now using only three independent variables. Once again, court appearances in the four years prior to being tested was significant ($p < 0.001$) and the other two variables were insignificant. Thirty point two percent of the variance was accounted for in this multiple regression, (see Table 5).

Table 4: Multiple regression results and correlations

Dependent variable; court appearances from 1983 to 1989

| Indep Var | BETA | Signif. of t. |
|---|---|---|
| MAST-scr | .03375 | .68275 |
| AGEAT1st | -.06682 | .56902 |
| AGEATest | -.07935 | .49322 |
| CAlast4y | .46577 | .00000 |

Multiple R-Square: .3038338

Correlations

| Variables | AGEAT1st | AGEATest |
|---|---|---|
| MAST-scr | -.30477 | -.23403 |
| AGEAT1st | 1.00000 | .73050 |
| AGEATest | .73050 | 1.00000 |
| CAlast4y | -.41182 | -.41589 |

Table 5: Multiple regression results

Dependent variable; court appearances from 1983 to 1989

| Indep Var | BETA | Signif. of t. |
|---|---|---|
| MAST-scr | .04197 | .60474 |
| AGEATest | -.12329 | .15348 |
| CAlast4y | .47285 | .00000 |

Multiple R-Square: .3018763

In the multiple regression for serious recidivism (number of imprisonments from 1983 to 1989), court appearances in the four years prior to testing was once again the only significant variable, $p < 0.05$. The other two independent variables were not significant at all. Variance accounted for was 8.7 percent, (see Table 6).

Table 6: Multiple regression results

Dependent variable; Imprisonments from 1983 to 1989

| Indep Var | BETA | Signif. of t. |
|---|---|---|
| MAST-scr | -.02546 | .78357 |
| AGEATest | -.16114 | .10328 |
| CAlast4y | .19641 | .04932 |

Multiple R-Square: .0869738

Regression of the independent variables predicting recidivism involving alcohol related offenses also showed court appearances in the four years prior to testing to be the only significant predictor, $p < 0.001$. MAST score was not predictive at all, and neither was age when tested on the MAST. Variance accounted for was 26.5 percent, (see Table 7). When the dependent variable was changed to `court appearances that had not been shown to be alcohol related`, identical results were yielded with court appearances in the four years prior to testing being significant at $p = 0.001$, (see Table 8).

Table 7: Multiple regression results

Dependent variable; Recidivism involving alcohol related offenses

| Indep Var | BETA | Signif. of t. |
|---|---|---|
| MAST-scr | .04784 | .56547 |
| AGEATest | -.08251 | .35083 |
| CAlast4y | .45886 | .00000 |

Multiple R-Square: .2645050

Table 8: Multiple regression results

Dependent variable; Court appearances not involving crimes shown to be alcohol related

| Indep Var | BETA | Signif. of t. |
|---|---|---|
| MAST-scr | .01648 | .85338 |
| AGEATest | -.13815 | .14616 |
| CAlast4y | .30963 | .00149 |

Multiple R-Square: .1545552

In order to check whether the MAST really did perform so poorly in these instances, further calculations were done. Scores from the MAST were divided into four categories; zero, 1, 2, and 3. Scores from zero to 4 were placed in category `0`, scores from 5 to 9 in category 1, scores from 10 to 19 in category 2, and the remainder into category three. All scores were represented by these categories.

Simple regression analyses were done using as dependent variables; court appearances from 1983 to 1989; imprisonments from 1983 to 1989 and convictions for alcohol related crimes from 1983 to 1989. The analyses showed virtually no difference than when the MAST score was left in its original state.

Following this, it was decided to replace the category number with the mean scores for each group. Again, there was very little change from the original correlations.

The final analysis done on the MAST was to separate all scores into either alcoholic or non alcoholic, that is, category zero or category one. Seven was used as the cutoff point for alcoholism. Again, there were no significant results. Instead, as in all regression analyses, the MAST proved too weak especially when compared to the predictor, `court appearances in the four years prior to being tested on the MAST`.

The multiple regressions, as did the simple regressions give overwhelming support for the number of court appearances over the previous four years as being the best identified predictor of recidivism in this study. Only in simple regression are the other predictors significant. This means that the MAST contributes very little predictive information to the study of recidivism when other much stronger predictor variables are present. The MAST does not appear to measure anything different to other variables, and neither does it measure any more.

CONTENTS

DISCUSSION

## DISCUSSION

There are three features of this piece of work that have not been collectively represented elsewhere in literature on the alcohol crime relationship. Firstly, the study has used a psychometric test of repute for studying the incidence of alcoholism. The MAST has provided data possibly more accurate than other tests that propose to measure the same concept. Secondly, this study has endeavoured to predict recidivism especially with respect to offenses that have been shown to be alcohol related. McLean (in press) administered the MAST to the inmates and found that the frequency of conviction for certain offenses correlated with their scores. McLean was looking at their prior records. The present study wanted to see if the MAST could identify recidivists who were convicted for these same offenses subsequent to testing. These offenses were looked at separately from those offenses that McLean did not show as alcohol related. That is, this work has been a followup exercise. Criminal records of the original subjects of McLean were taken from the Wanganui computer by the Department of Justice. These were perused, looking particularly at the type and quantity of offenses committed in the period between 1983 and 1989. Few other studies have done followup exercises of this nature, using all of these features.

There are two primary ways in which the results that we found can be used. The first is that they can help target potential reoffenders. If potential offenders are

identified early on in their careers, steps can be taken to ensure that their offending is not continued. For example, in Chapter 1, selective incapacitation was proposed as a measure for controlling offending, and using resources with greater efficiency. Thus, a person who is identified as being more likely to reoffend may be imprisoned for a longer period of time than a person who is shown to be unlikely to reoffend. At the same time these sentences would need to be weighted for the severity of the crime committed. Further, predictions are required to be very accurate. As was discussed in Chapter 1, false negatives and false positives are a major problem with this scheme. Firstly, public safety is at risk if someone is predicted to be a low risk, and turns out to be a high risk. Secondly, there is a chance that someone is imprisoned [unjustly] for a longer period of time than is necessary, and who may be of very little risk to the public.

The second way that results can be used, is to identify those individuals for whom treatment might reduce recidivism. Through this, an indication can sometimes be given on what sort of treatment offenders need in order to reduce their likelihood of reoffending. For example, in this instance alcohol related offenses correlate with MAST scores. Where this is the case, offenders can be treated for alcohol abuse, which may in turn lead to a reduction in rates of recidivism. Prediction exercises highlight many difficulties which can be addressed in various forms of rehabilitation. Pritchard (1979) listed a number of variables that were predictive of recidivism, some of which

can certainly be modified in treatment. For example, employment featured highly on his list. Thus, a reduction in the crime rate might be achieved through teaching offenders work-related skills.

When predictions are being made to determine those offenders most in need of rehabilitative treatment, accuracy in prediction is not as imperative as the accuracy required in predicting people for selective incapacitation. In the first instance, the public is not put at risk if one person is rehabilitated instead of another who needs it more. In each case, the rehabilitation is likely to be of some use. By predicting people accurately for rehabilitative programmes, better use is made of limited resources. Failing this, there is no real harm. In the second instance, accuracy in prediction is imperative, both in fairness to the public and to the offender, as was said above.

## Predictors of recidivism

For the reasons shown above, there is a real need to find predictors of recidivism. Those which are of the greatest value, are variables that can be modified with treatment. Although the focus of the present study is alcohol disorder other predictive variables were addressed in the introduction.

In Chapter 2, several predictors of recidivism were discussed, and of these, we identified some as being quite strong. Acquired variables proved to be very good predictors, and so did some intrinsic variables. The variables noted for being good were, stability of employment, income, living arrangements, drug use, age, prior convictions, and alcohol abuse. The concept of alcohol abuse will be explored in more depth, but for the time being, results from the present study will be compared with other studies in the literature for the other variables.

Several of these variables cannot be discussed in light of what has been found in the present study, because we have not studied the relevant data. However, it is still important that they be acknowledged in light of the other predictor variables, and the relative strengths of these variables compared.

Pritchard (1979) recognised that if a person was employed, they were much less likely to reoffend than if the opposite were true. Ninety three percent of the studies that he reviewed felt that if a person was not employed, they were likely to reoffend. Related to this issue is income. Employment generates income, thus, with no employment, offenders can become recidivists as they strive for an illegitimate income. Income was shown to be related to recidivism in 73 percent of the studies that Pritchard (1979) reviewed.

Living arrangements were also shown to be related to recidivism (85 %). If a person has a permanent home with supportive family members, he is less likely to be a recidivist than a person with no permanent abode. Further, an offender who lives with other offenders, lives in an environment probably more conducive to recidivism than one who does not. Thus, living arrangements can be very important in the study of recidivism. Drug use is another variable that Pritchard said was related to recidivism (90% of the studies reviewed said it was related). Pritchard looked at a history of drug abuse, whilst Miller et al., (1986) looked at how many offenders used drugs prior to committing a crime. Miller et al., (1986) found that 60 percent of their sample reported use of drugs before a crime. This is a very high percentage, and taken in context, it does not seem unusual that 9 of the 10 studies in Pritchard's review reported a history of drug use as related to recidivism.

In the present study, age was measured in two different ways. These were, age when administered the MAST, and age at first conviction.

The age of an offender is important. Recidivism research has often reported that the younger a person begins offending, the more likely he is to continue offending. Literature has also shown that the older a person is, the less likely he is to reoffend. If one person is shown to be less likely to reoffend than another under these circumstances (i.e. through their age) then it makes

economic sense to direct resources toward the younger offender in the hope of eliminating future offending. Rehabilitating a person who is considered unlikely, or less likely to reoffend is not efficient use of limited resources. The data used to predict which offenders should be rehabilitated is their `present` age (in this case, their age when McLean tested them on the MAST). Figure 6 shows these ages. Figure 6 shows a high incidence of offenders aged 27 or less. It shows only a small percentage of people over this age. Figure 6 also shows a decline in the percentages of offenders as they get older. This illustrates the point, that as a person ages he becomes less likely to offend, than at a younger age where there is a very high percentage of offenders. This is true regardless of whether the offender has been incarcerated or merely given a fine.

With the information that McLean had in 1983, (and especially if he had had the information that was made available for this thesis), it is quite possible that he would have been able to predict the likelihood of each offender reoffending by using their ages at that point in time. For example, when administered the MAST, one offender was aged 57 years. McLean could have predicted with some certainty that this offender was unlikely to reoffend. Similarly, McLean could have predicted that those offenders aged 19 to 20 had a greater chance of reoffending. By doing this, he would have been able to identify suitable offenders for treatment.

The variable, age when administered the MAST is also useful in another way. It shows the ages of all the offenders when they were first imprisoned. According to Figure 6, 30 percent of the offenders were imprisoned at age 21, the highest percentage for any age. This category proved highly significant as a predictor of subsequent court appearances in simple regression ($r=-.330$, $p<.001$).

Similarly, age at first conviction was a very significant predictor in simple regression, ($r=-.327$, $p<.001$), predicting reconviction almost exactly as well as age when tested. Both of these `age` variables remained significant predictors of recidivism for all aspects that were tested, (i.e. subsequent`alcohol related offenses, imprisonments etc.) and usually proved quite similar in the things that they were measuring, (e.g. when endeavouring to predict alcohol related offenses, correlations were $r=-.291$ and $r=-.285$). Just as age when tested on the MAST looked at present age to predict future offending, age at first conviction can look at age to predict offending. Age at MAST gave a reflection of how likely the offenders in our sample were to reoffend from 1983 onwards. Age at first conviction shows how likely these same offenders were to reoffend at least four years earlier.

Figure 5 which gives statistics on age at first conviction, also shows the same structure of graphs that illustrate the incidence of crime. That is, a very rapid increase to the peak at approximately age 17, and then a more gradual decline. This shows that the sample of

offenders for this study is comparable in makeup to those of other studies.

Prior convictions proved to be the most comprehensive and consistent predictor of recidivism in this study. All of the statistical analyses performed showed prior convictions as the best predictor. In simple regression, this category was highly significant ($p<0.001$) for all variables except one, - subsequent imprisonments in which it was significant at ($p<0.05$).

Literature also supports this variable as being one of the best predictors that there is. Prior convictions were reviewed as intrinsic variables. Glaser (1983) speaks of;

> research... predictive of postrelease recidivism ... primarily aspects of the prior criminal record, such as number of arrests, confinements, and probation or parole violations, as well as drug and alcohol use, all of which predict recidivism.
>
> -Glaser (1981) p.224

McCarty et al., (1988) studied drunk drivers, and concluded that a person with a history of offenses was considered more at risk of continued offending.

The final and most important variable that this study explored is the role that alcohol assessment may play in predicting future crime. Of the studies that Pritchard (1979) reviewed, 82 percent indicated that there was a

relationship between these two concepts, and note, that Glaser (1983), quoted above, listed alcohol use as a predictor of recidivism. In fact, several accounts of the literature would have one believe that alcohol abuse is a stable predictor of recidivism. In the present study, this hypothesis was tested with New Zealand offenders. Using the MAST, we endeavoured to see whether or not these scores could identify recidivists.

The MAST was administered to offenders by McLean in 1983. The conviction histories of these offenders were followed up from 1983 to 1989 and then correlated with the scores from the MAST. It was found that in simple regression, MAST score was predictive of recidivism, that is, the number of court appearances in the 6 years from 1983 to 1989 ($p < 0.05$). Further, the MAST was also found to be predictive of those offenses shown to be alcohol related ($p < 0.05$), and as was expected, not predictive of offenses that had not been shown to be alcohol related, ($p > 0.05$). We expected these results because the MAST, as an alcoholism screening test, was more likely to identify those offenders who had both alcohol disorders and a significant number of crimes in their records that the MAST had already identified as correlating with alcohol. For this reason, the MAST was less likely to correlate with future occurrences of offenses that had not been shown to be alcohol related in offenders' prior records.

## A prediction model

In order to obtain a true assessment of the value of the MAST and each other independent variable in predicting recidivism we used multiple regression. Multiple regression involves combining variables with the aim of providing a much better overall prediction of recidivism. That is, adding up the predictive abilities of single variables, and thus better predicting recidivists than any one single predictor could do on its own.

The concept of multiple regression can be summed up in this equation:

$$Y = BX + B_2X_2 + B_3X_3 + B_4X_4 + a$$

The value of Y is predicted by the variables in the equation. It is the dependent variable; in this case it will relate to offending between 1983 and 1989. The independent variables, or `predictors` are represented by X. The value of $B_1$ is multiplied with the value of $X_1$. The product is then added to the product of $B_2X_2$, and so on. The other independent variables that one might wish to put into this equation are represented by the letter a.

In the present study, we used four dependent variables. These were 1) the number of court appearances from 1983 to 1989, 2) number of imprisonments from 1983 to 1989, 3) number of court appearances from 1983 to 1989 for offenses

shown to be alcohol related, and 4) court appearances from 1983 to 1989 for offenses that had not been shown to be alcohol related. These were studied with four independent variables, 1) MAST score, 2) age when tested on the MAST, 3) age at first conviction, and 4) number of convictions in the four years prior to being tested on the MAST. In the first equation, designed to predict the number of court appearances, it was noticed that age when tested on the MAST, and age at first conviction were likely to be measuring the same thing, (the correlation between them was 0.73050 which was considered high). When measuring this same dependent variable in the simple regressions, age when tested on the MAST appeared slightly better as a predictor. For this reason, age at first conviction was eliminated from any further statistical analyses. In doing the multiple regressions, our main aim was to test the value of the MAST as a predictor of recidivism.

When the MAST was combined in multiple regression with other predictive (independent) variables it did not perform well. It had no significant contribution in any equation for predicting recidivism. The variables with which it was competing to predict recidivism were too strong thus minimising any effect that it may have had. What this means, is that anything that the MAST did predict in this equation, was covered by another variable, that predicted this much and more. The MAST clearly does not have a place in this equation as a predictor variable.

Age when tested on the MAST also proved to be of no value in predicting recidivism for any of the dependent variables. Like the MAST it was significant only in the simple regressions, and thus has no place in the multiple regression equation.

The best identified predictor in this study was the number of court appearances in the four years prior to being tested on the MAST, (prior convictions). In three of the four multiple regressions that were done, where the other two variables had no significant input, prior convictions was significant in each case at $p <= 0.001$. On the fourth, prior convictions was still significant, but at $p < 0.05$.

For those analyses in which prior convictions was most significant ($p <= 0.001$), variance accounted for ranged from 15.4 percent to 30.4 percent. For number of imprisonments from 1983 to 1989, variance accounted for was 8.7 percent. Because the other two independent variables had little or no input in the predictions, it is fair to say that on its own, prior convictions accounted for this variance. Variance accounted for is an estimate of how well the equation that we have fits the subsequent offending of our sample. Thus, if all of our observations fall on the regression line, we can say we have accounted for 100 percent of the variance.

## Possible problems with the MAST

Unfortunately, as has been noted, the MAST did not perform well. It is necessary to understand possible reasons for this. Firstly, the MAST is a test designed to identify alcoholics, not recidivists as we have endeavoured to do. When compared to other studies that have used standardised testing methods on prison samples, similar percentages of alcoholics were gained. As far as doing what it was designed for, the MAST was very good. Only when it is taken into a field for which it was not designed does the MAST fail. The fact that it was able to identify recidivists at all is creditable.

Secondly, the way in which we put together our data may have been at fault. The MAST was administered to the offenders at the time of their first imprisonment. At this stage, some offenders already had substantial criminal histories even though they had never been imprisoned. Following imprisonment, some of these offenders did not commit any more crimes for which they were apprehended. This does not mean that they were not already recidivists or `multiple offenders` in their own right, but that by first testing them at imprisonment, they were not recognised as such.

Finally, the MAST may not have given good results because the relevant data were not there to begin with. It remains quite possible that alcoholics committed very few more crimes than the average non-alcoholic offender and that we

do not have as great a problem with alcohol and crime as the literature might have us believe. We could not strongly predict recidivism by alcoholism scores. Theoretically, the higher the alcoholism score, the greater the likelihood of recidivism. In the present case, higher MAST scores did not necessarily mean the reoffending was more likely.

Treatment for alcohol problems

Despite these possibilities, the MAST can still be used to give an indication of recidivism. Its use is wholly dependent on whether or not other predictor variables are available that are capable of as much or more than the MAST, and the type of offenses that are being measured. The MAST did after all identify offenses as being alcohol related, (McLean, in press) and from this the likelihood of recidivism associated with these offenses.

The literature provides a case for the fact that alcoholism is involved in crime. It has been shown in this study that things are not as simple as the literature suggests. Alcohol has not been shown to be a good predictor of recidivism. That it is involved in a great deal of crime is in no doubt. McLean illustrated this when he found particular crimes to be alcohol related. Rather, there is not such a great problem with alcoholism that it can be used to predict recidivism. If alcoholism had been good at predicting recidivism, there would be a very good reason for initiating rehabilitation in this area. As it is, although we do not have a strong case for employing

rehabilitation schemes, reducing recidivism in any way possible is imperative. Thus, if even a handful of offenders can be identified by these means the country's crime rate can be reduced. Alcoholism treatment is therefore seen as an economic way to use some of New Zealand's resources. When the cost of keeping a person in prison is offset by the cost rehabilitating them so that they will not reoffend, treatment is surely the cheaper option.

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